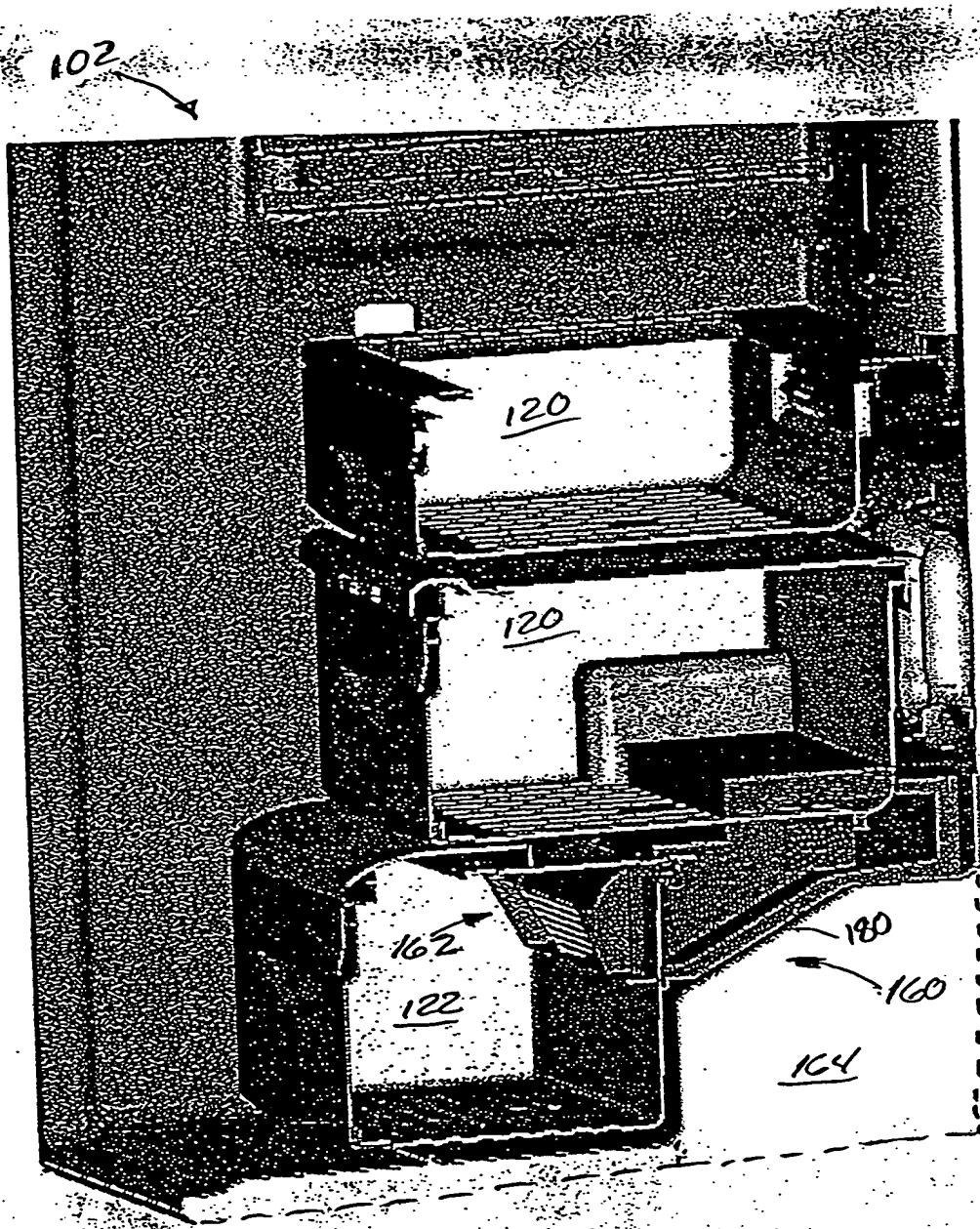


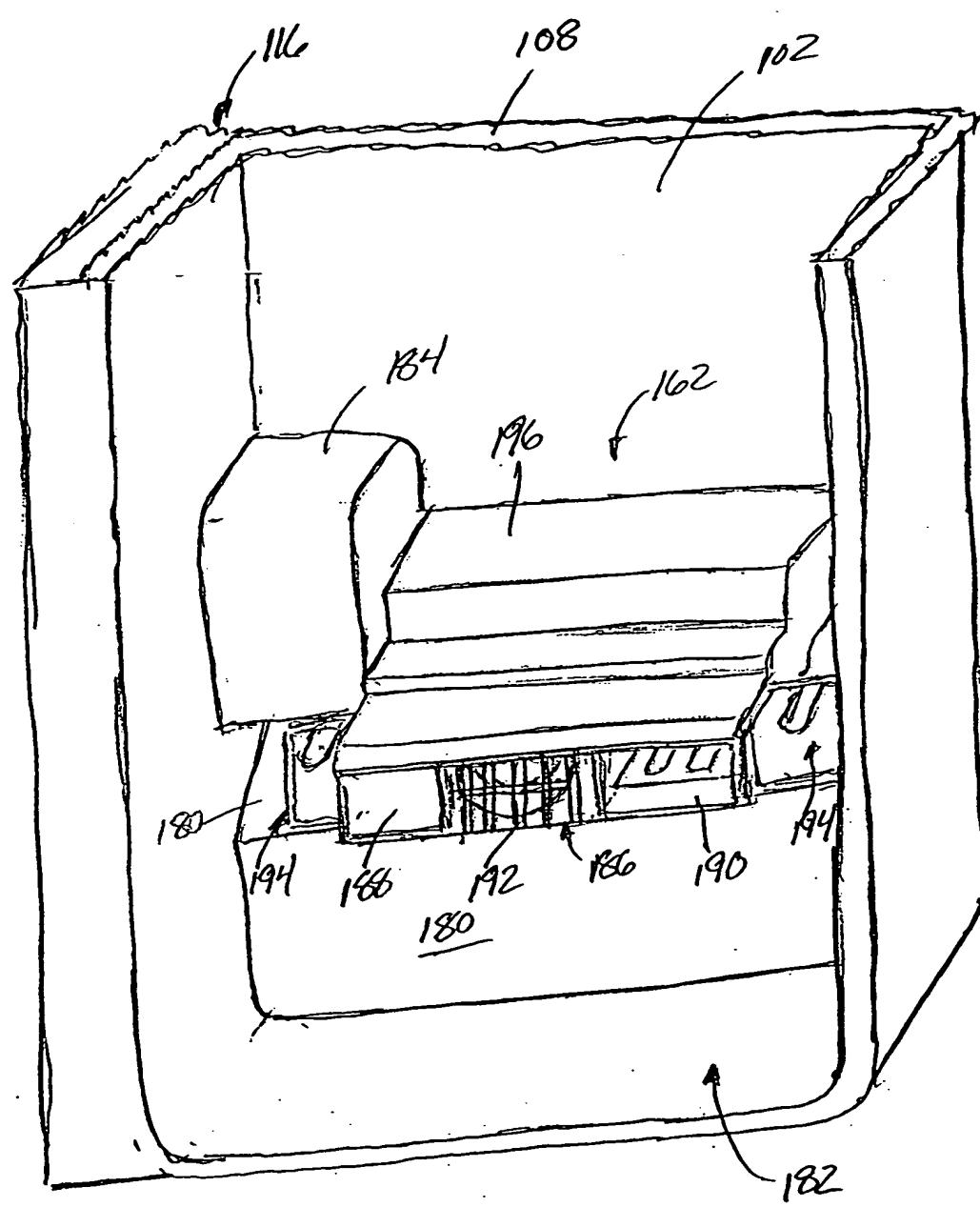
FIG. I

705040 - 002452



2/55

FIG. 2



3/55

FIG. 3

4/55

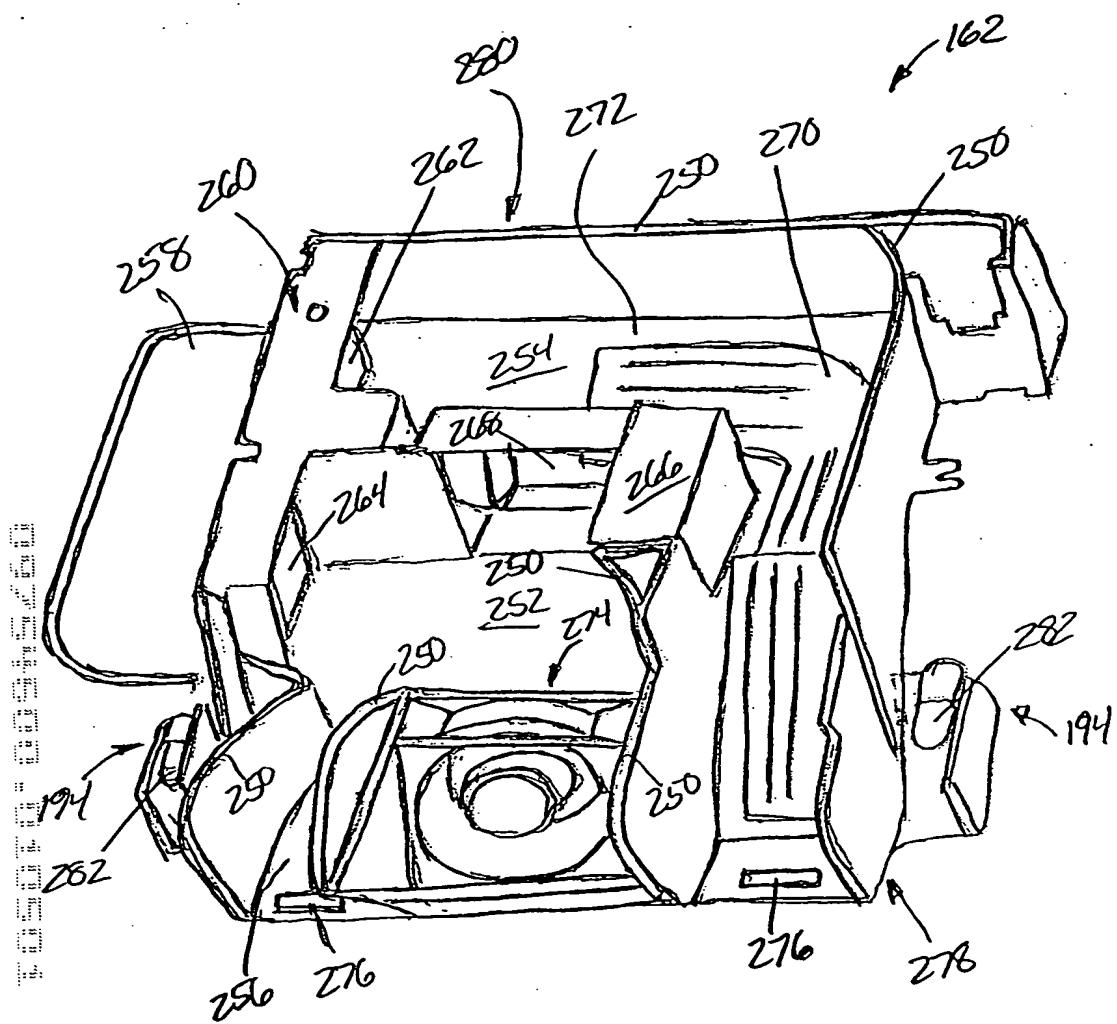


FIG. 4

5/55

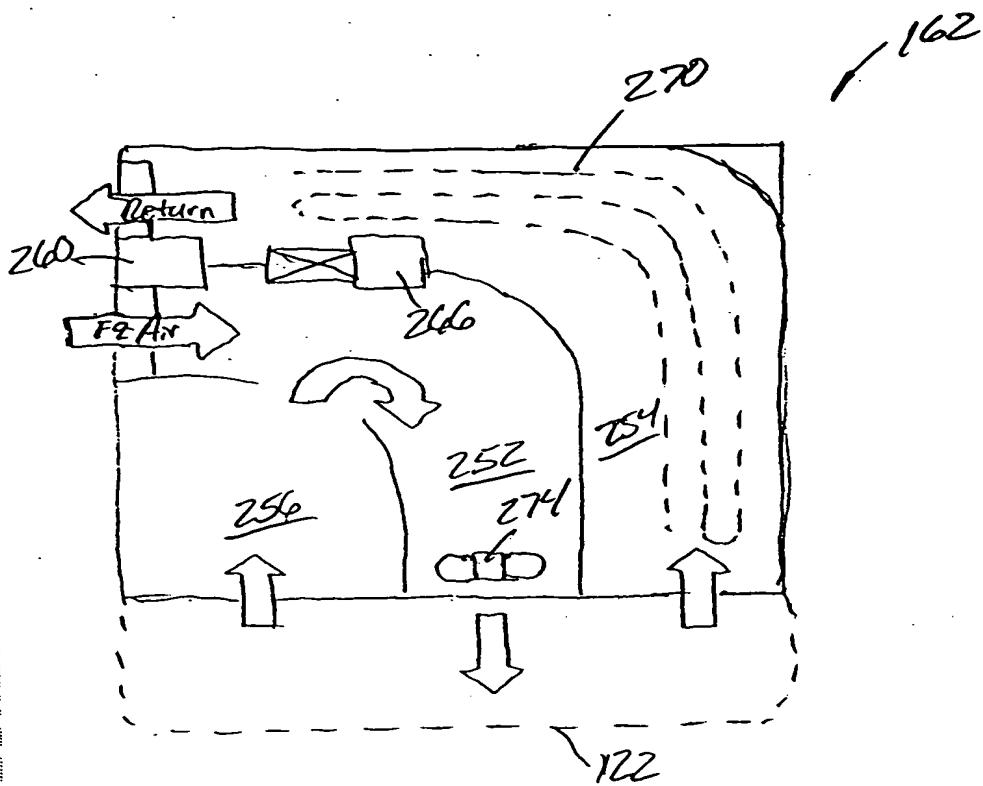
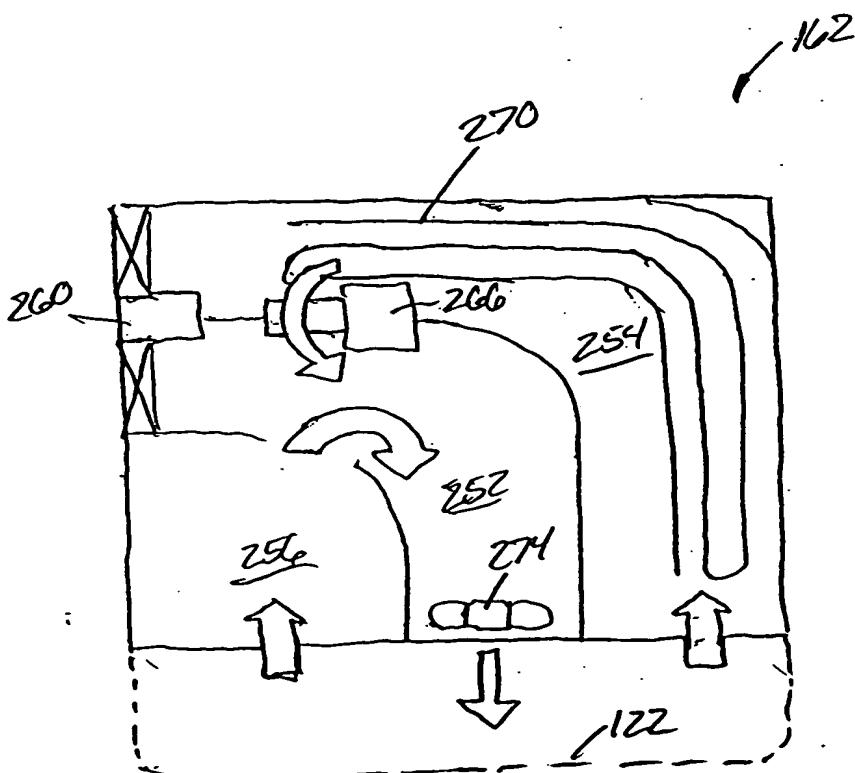


FIG. 5



cont. 10

6/55

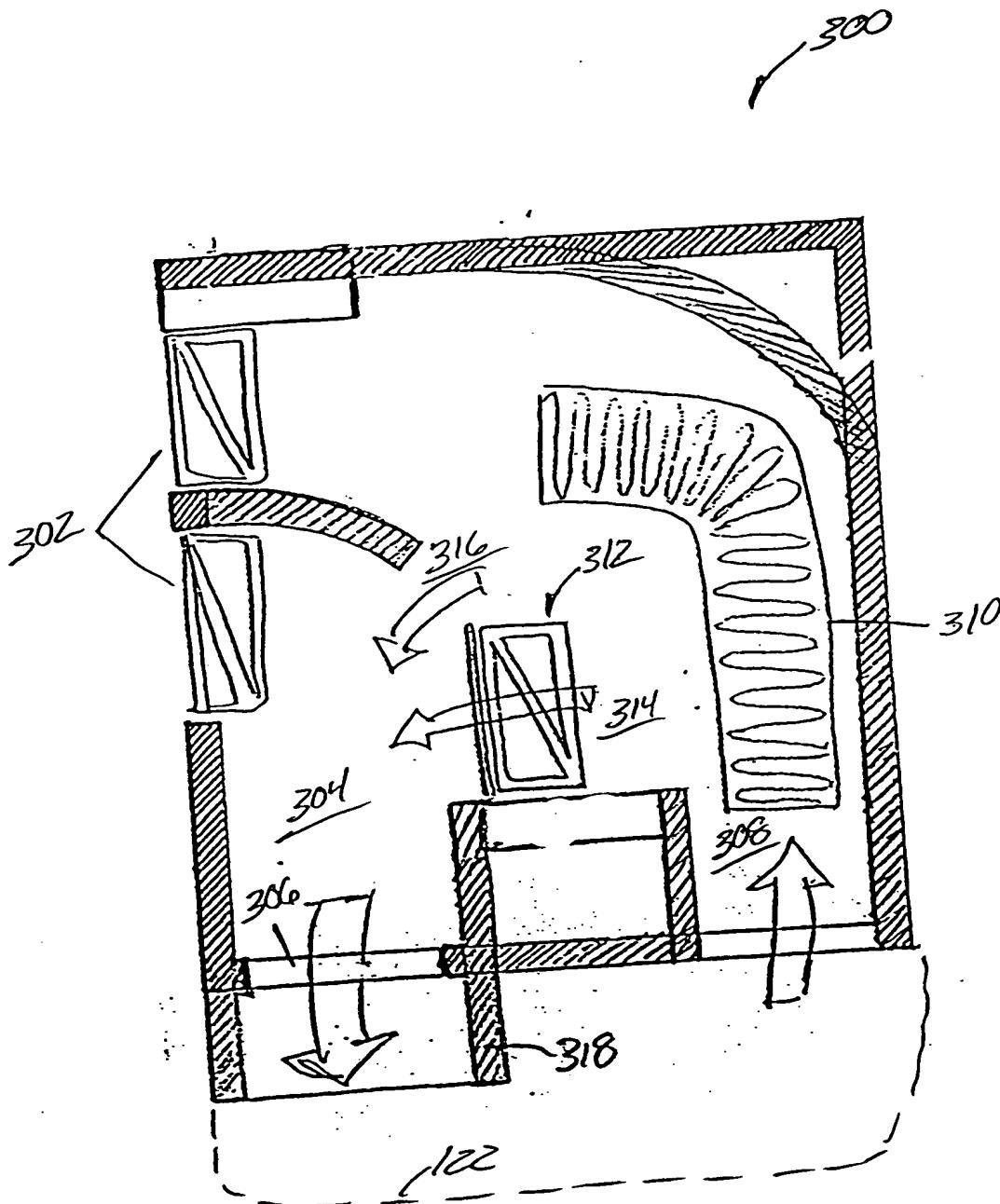
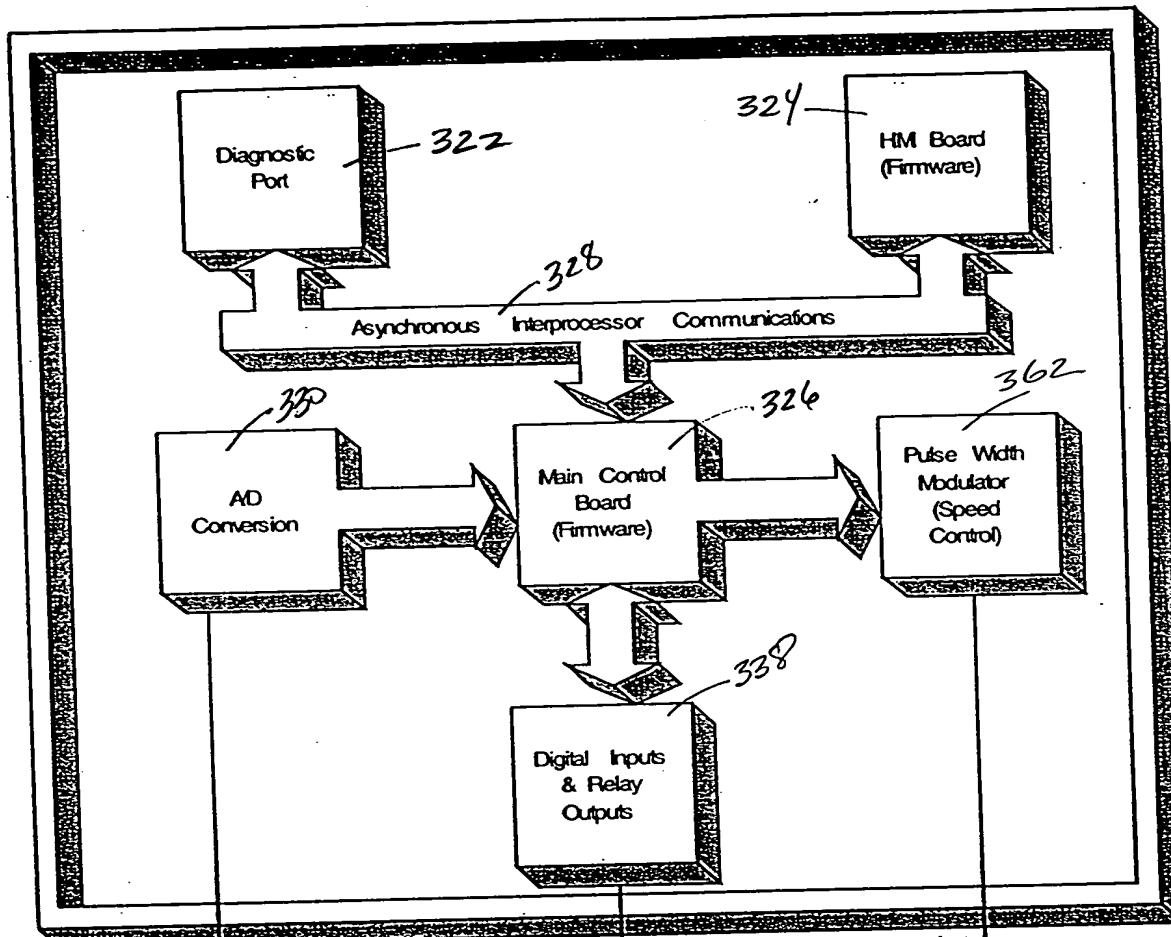


FIG. 7



- FF Temp 2 - 332
 - FF Temp - 332
 - Feature Pan Temp - 276
 - FZ Temp - 334
 - Evap. Temp - 336

- Cond. Fan Tach.	- 340	- Condenser Fan - 364
- Evap. Fan Tach.	- 342	- FF Fan - 366
- Crusher Solenoid	- 344	- Evaporator Fan - 368
- Auger Motor	- 346	- Feature Pan Fan - 274
- Personality Inputs (Site Specific) - 348		
- Water Dispensor Valve. - 350		
- Encoders for Set Points - 352		
- Compressor Cntl - 354		
- Defrost Heater - 356		
- Door Detector - 358		
- Motion Damper - 360		
- Feature Pan Damper 1 - 260		
- Feature Pan Damper 2 - 266		
- Feature Pan Heater - 270		

FIG. 8

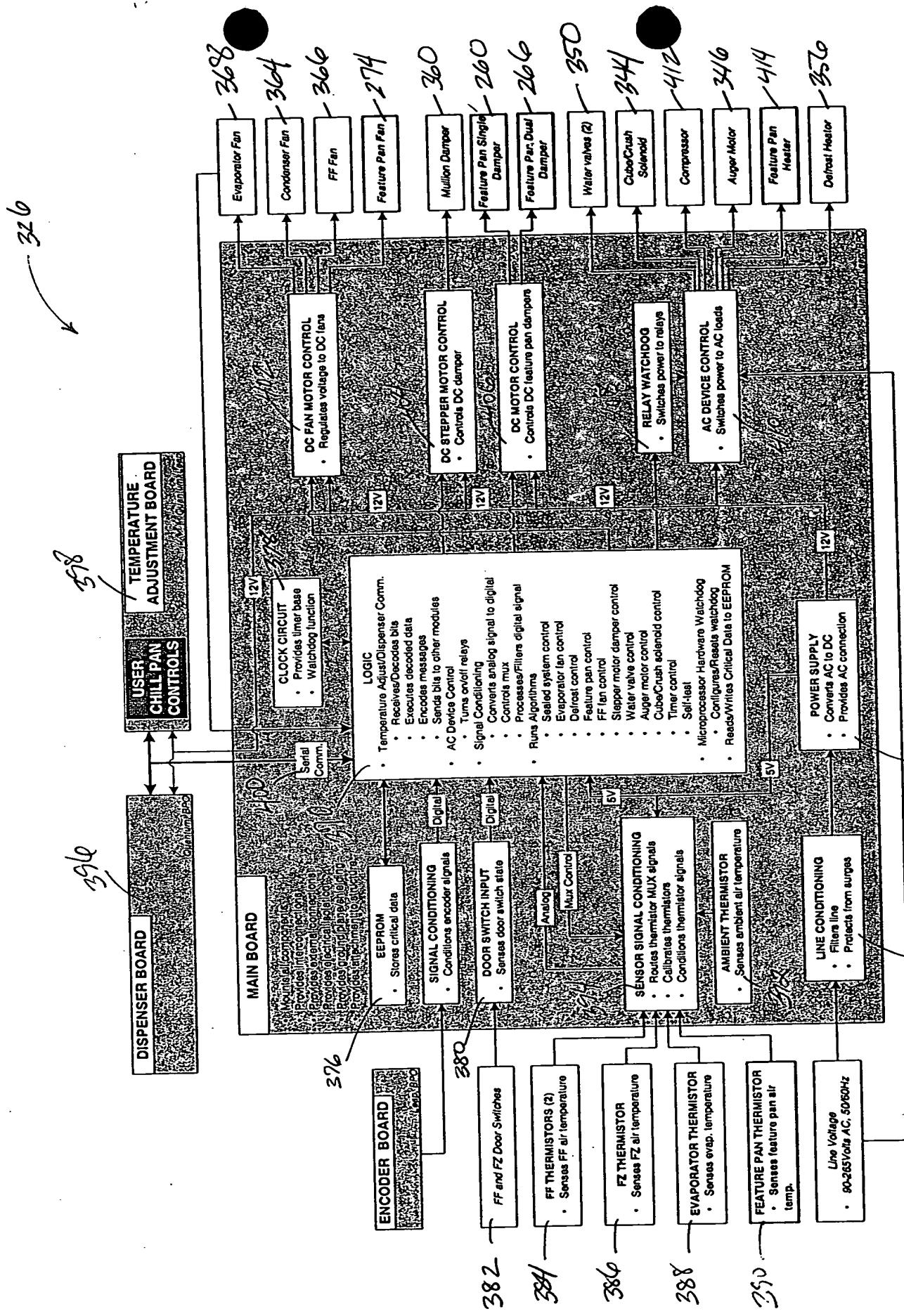


Fig. 9

9/55

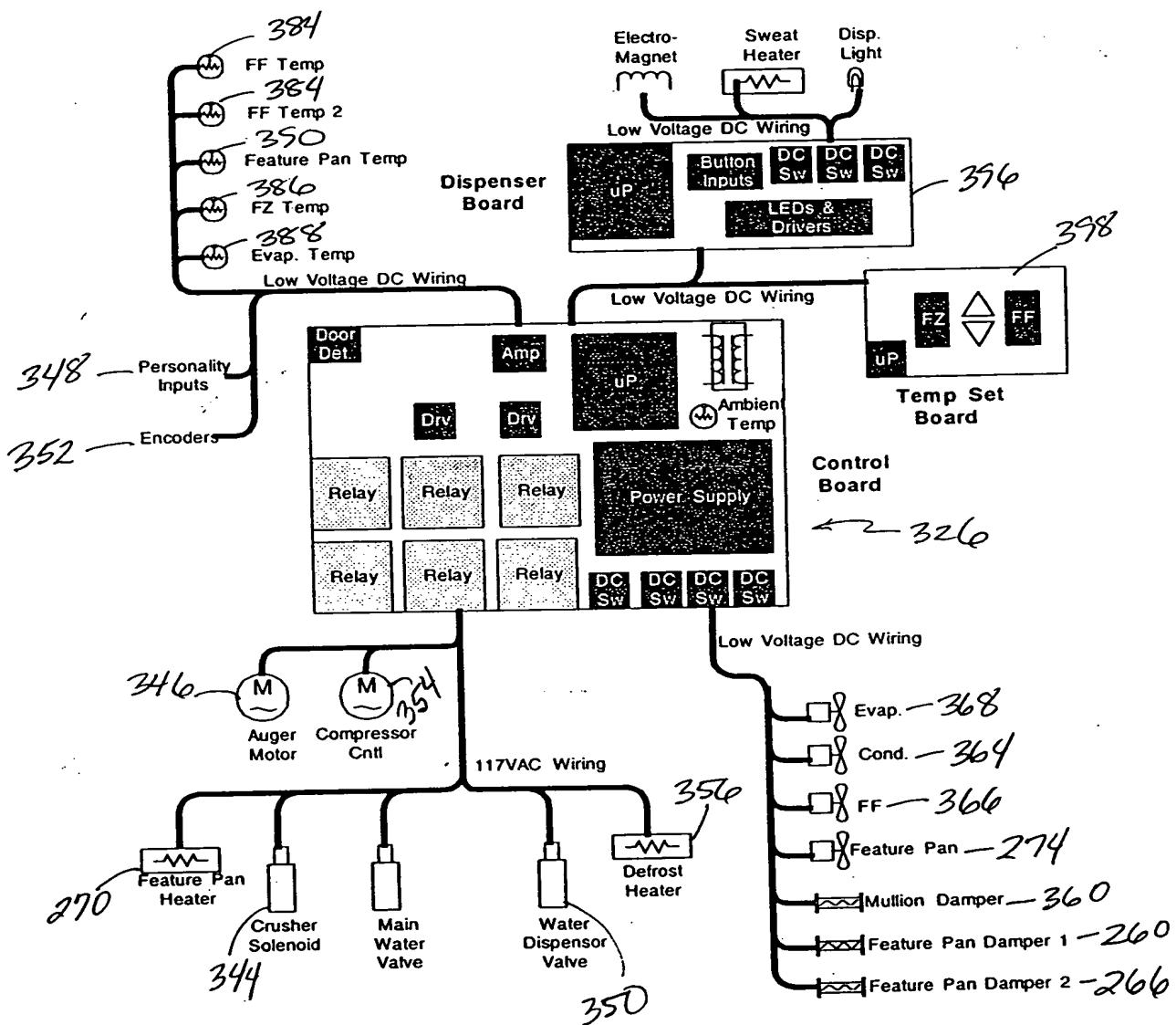


Fig 10

10/55

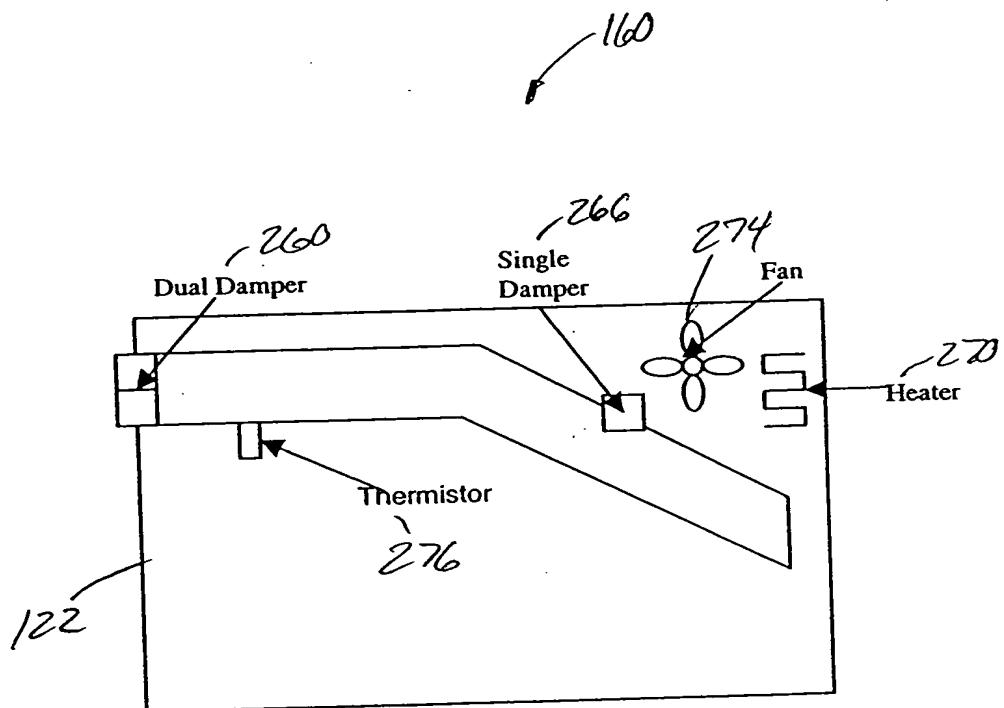


Fig. 11

11/55

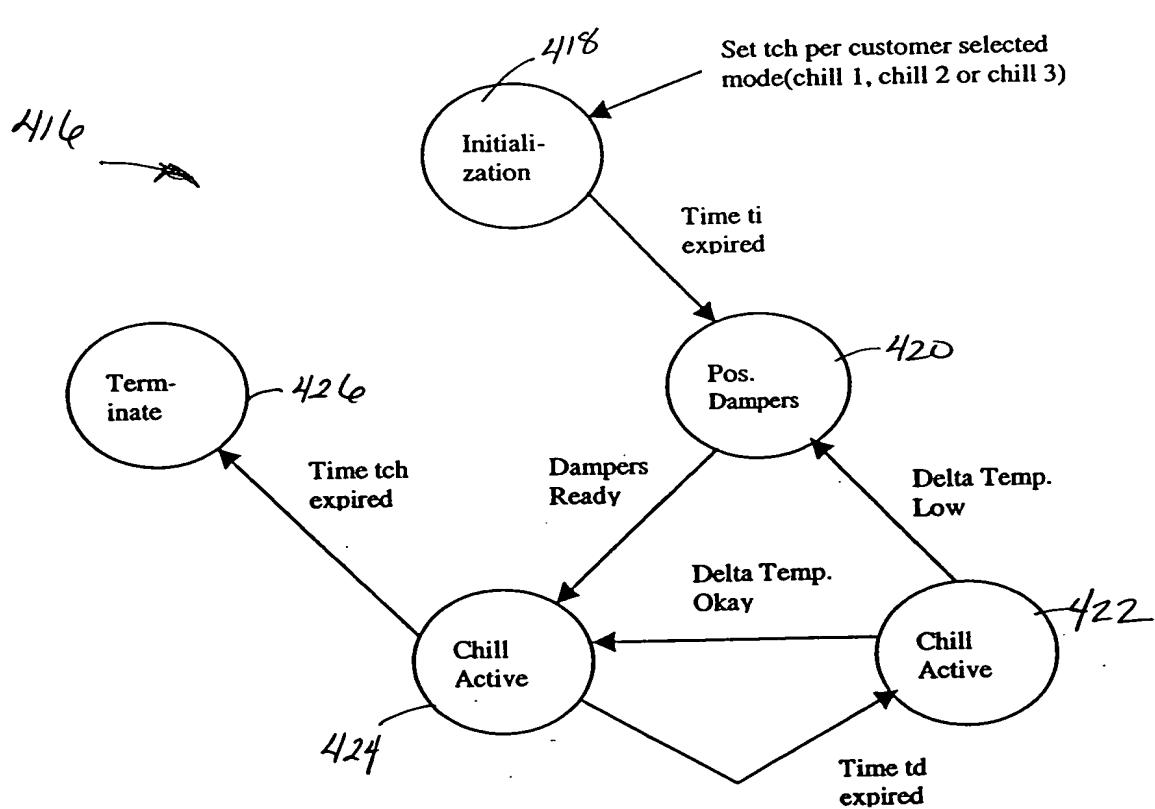
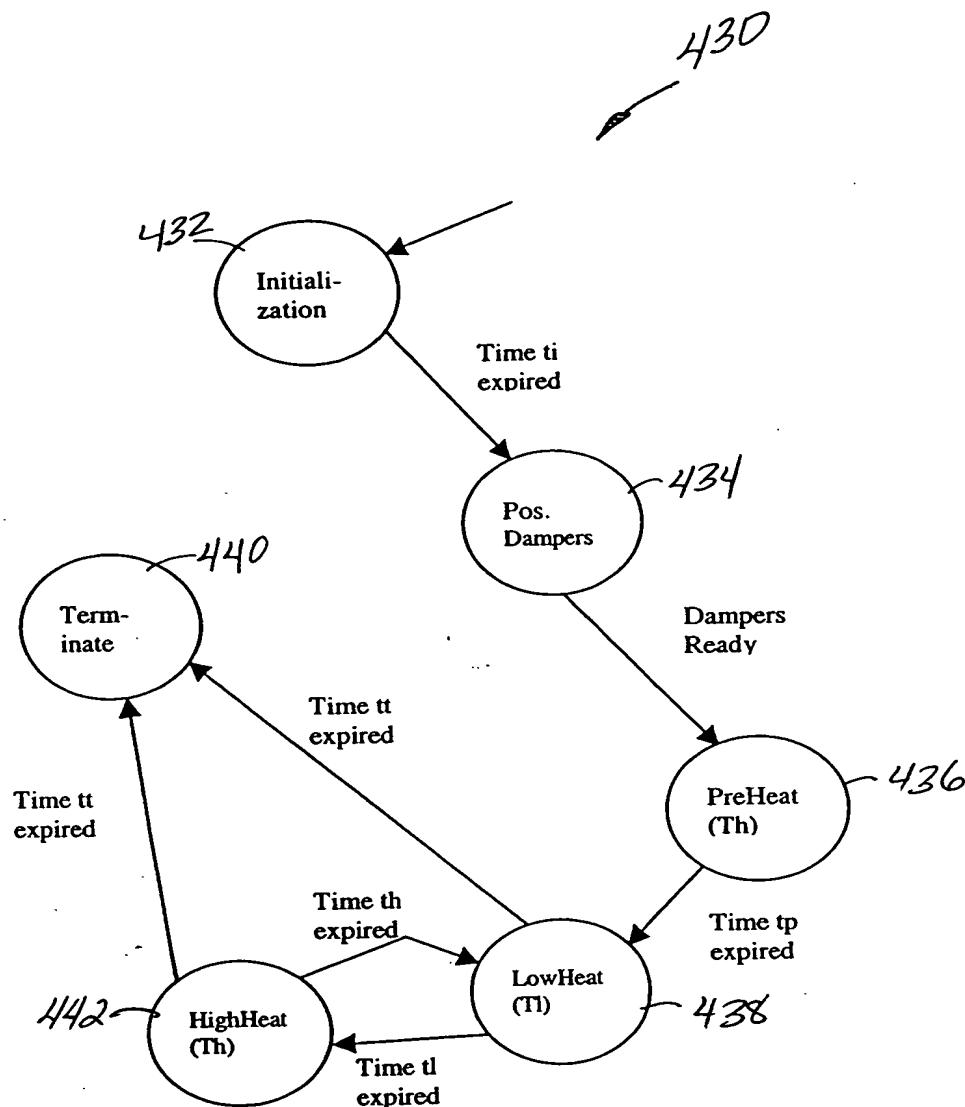


Fig. 12

12/55



Initialization: Shuts off heater and turns on fan. This mode is implemented so that the customer interface LED that is wired in parallel with the fan will turn on as soon as the button is hit. Time t_i is the initialization time and will typically be approximately one minute.

Pos. Dampers: This state shuts off the fan, sets the single damper open then closes the dual damper. It then turns the fan back on. This is done for power management.

PreHeat: This state regulates the pan temperature

LowHeat

HighHeat:

Terminate: This mode closes both dampers and shuts off the fan then returns to idle.

Fig. 13

13/55

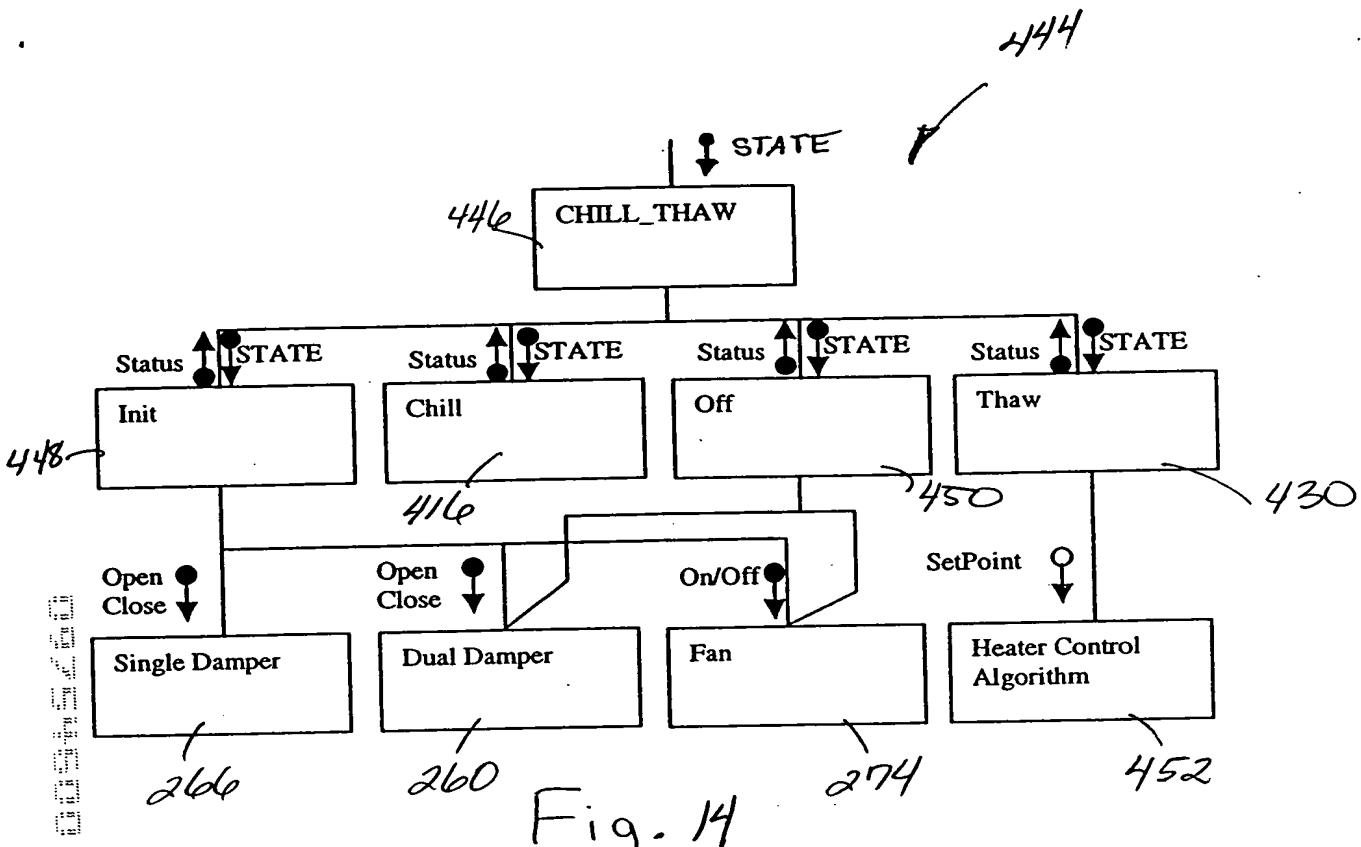


Fig. 14

14/55

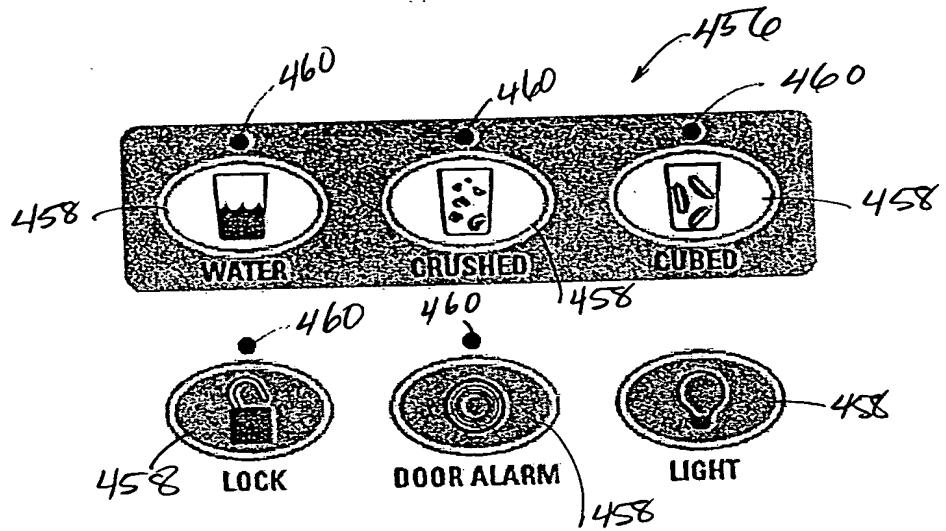


FIG. 15

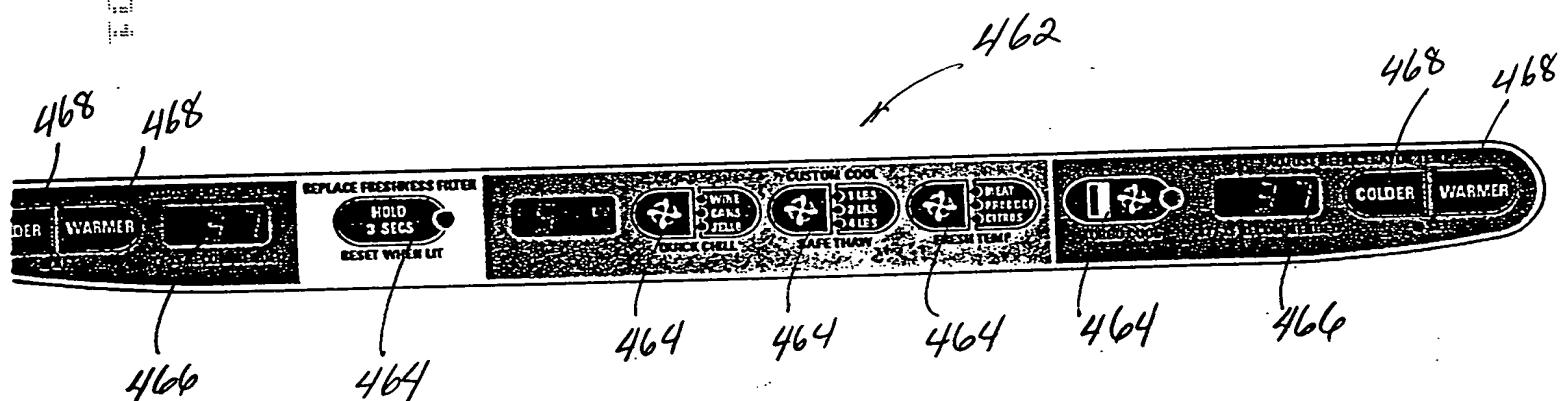


FIG. 16

15/55

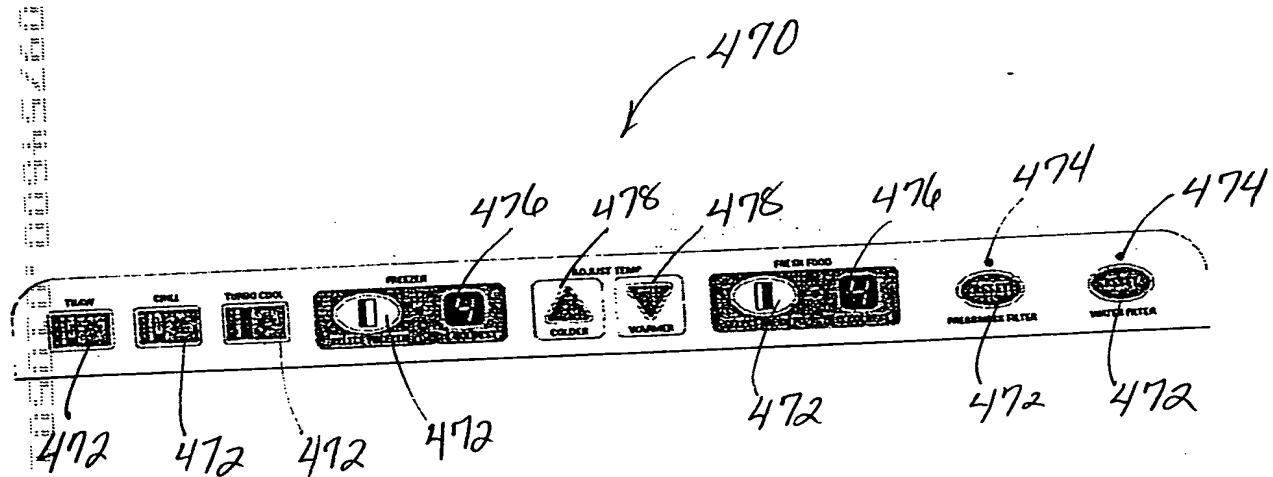
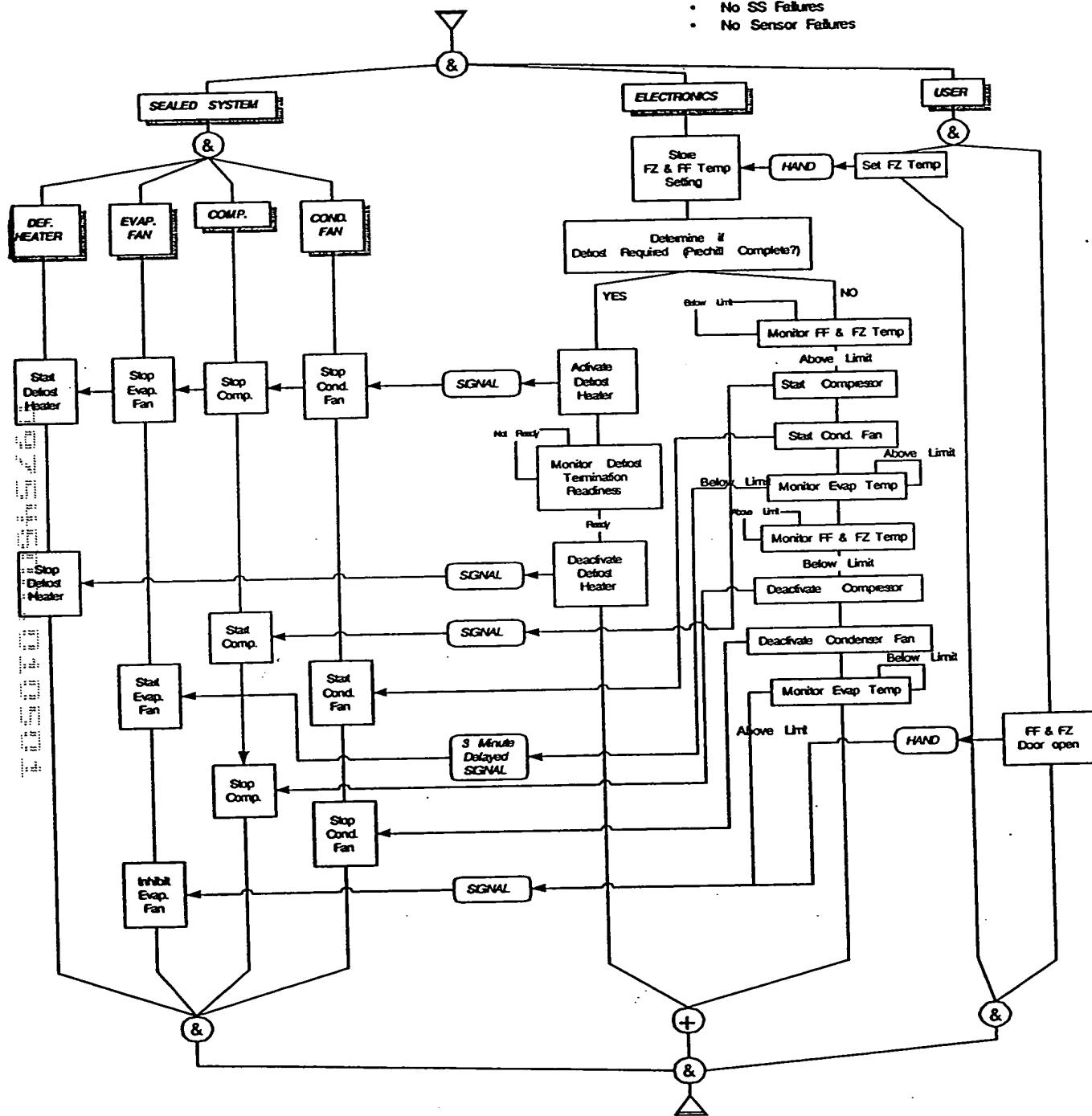


Figure 17.

Sealed System Assumptions:

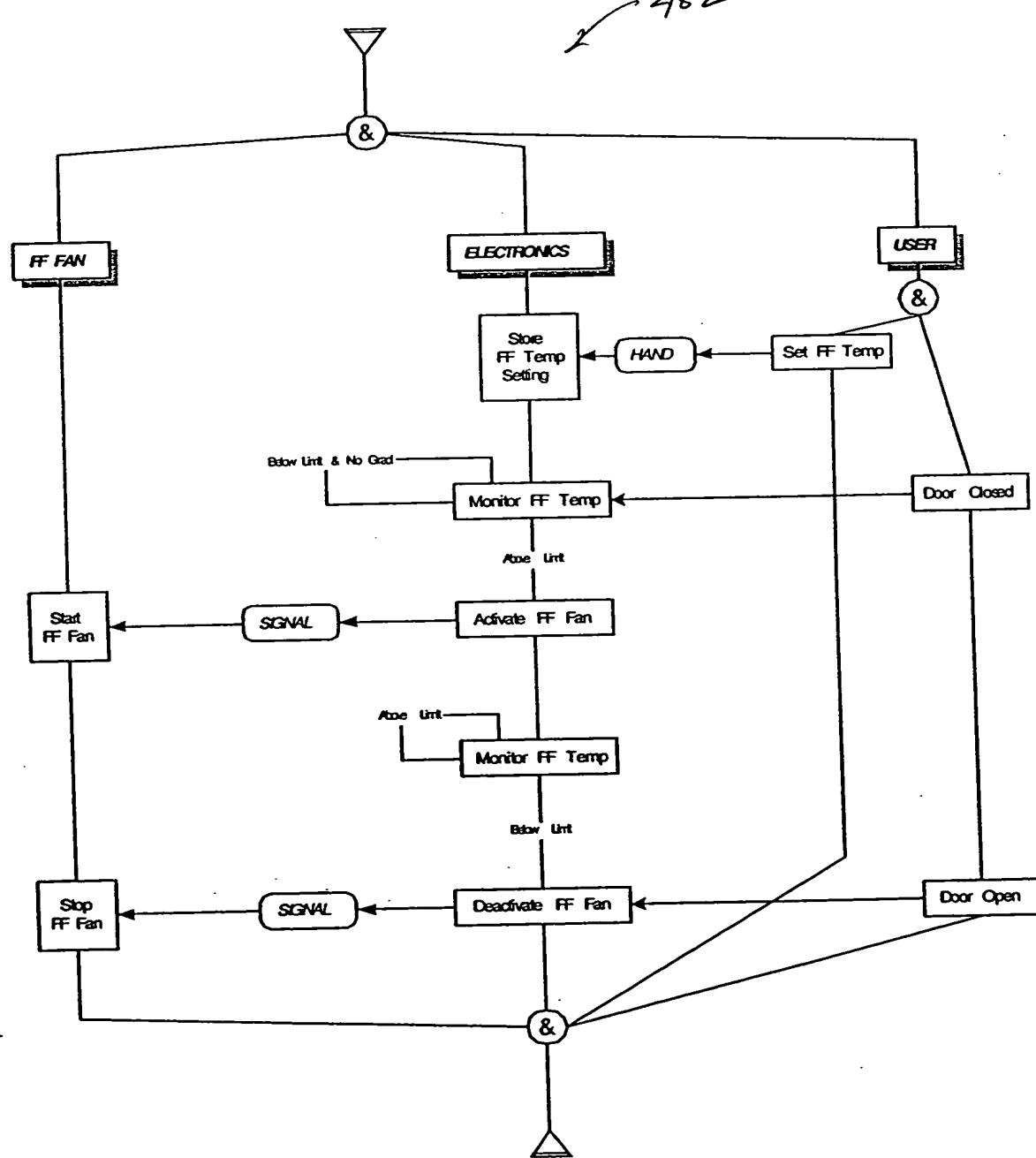
- No SS Failures
- No Sensor Failures



Sealed System Behavior Diagram

Fig 18

17/55



Fresh Food Fan Behavior Diagram

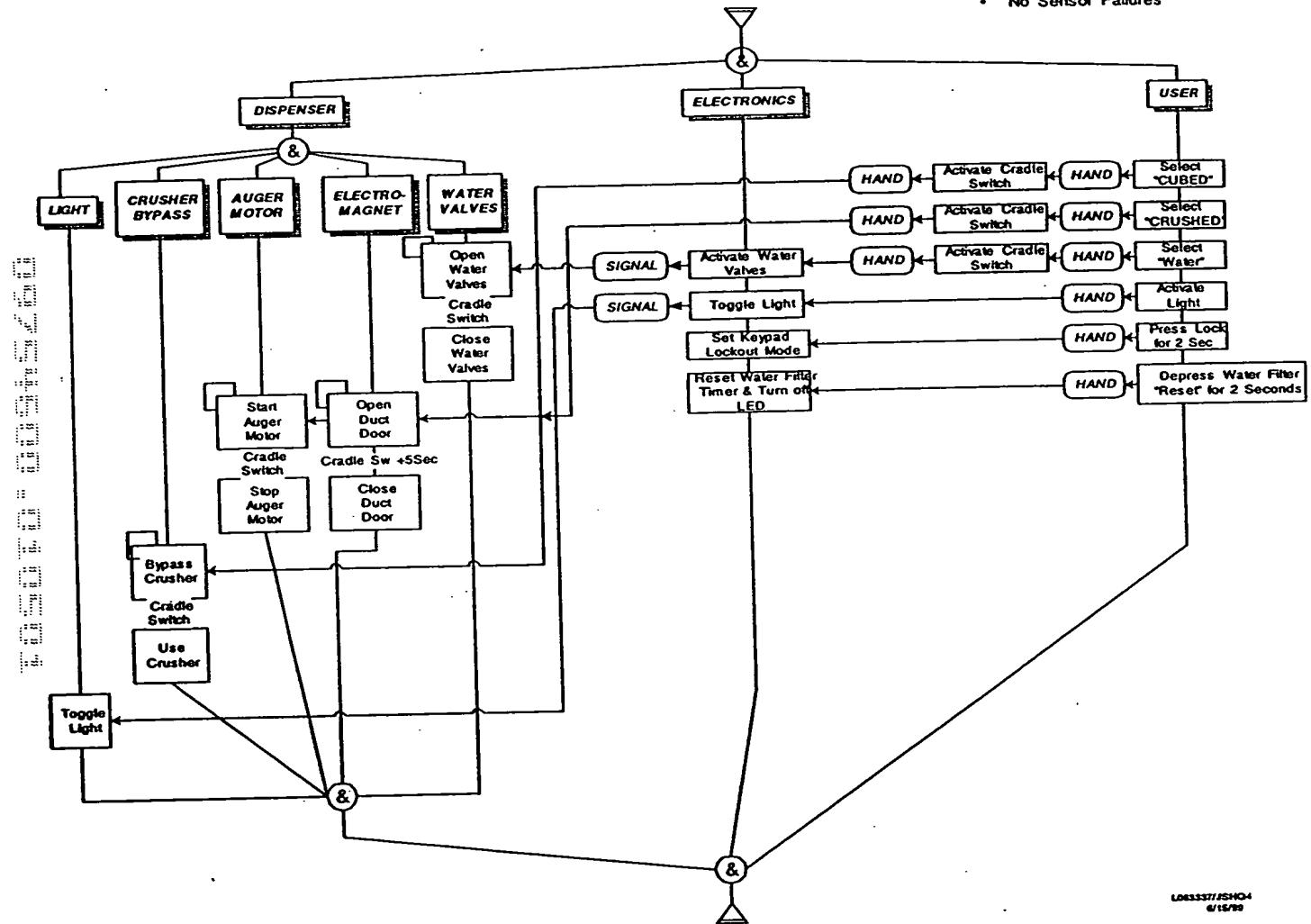
Fig 19

18/55

— 484 —

Dispenser Assumptions:

- No Sensor Failures



Dispenser Behavior

Fig. 20

484

19/55

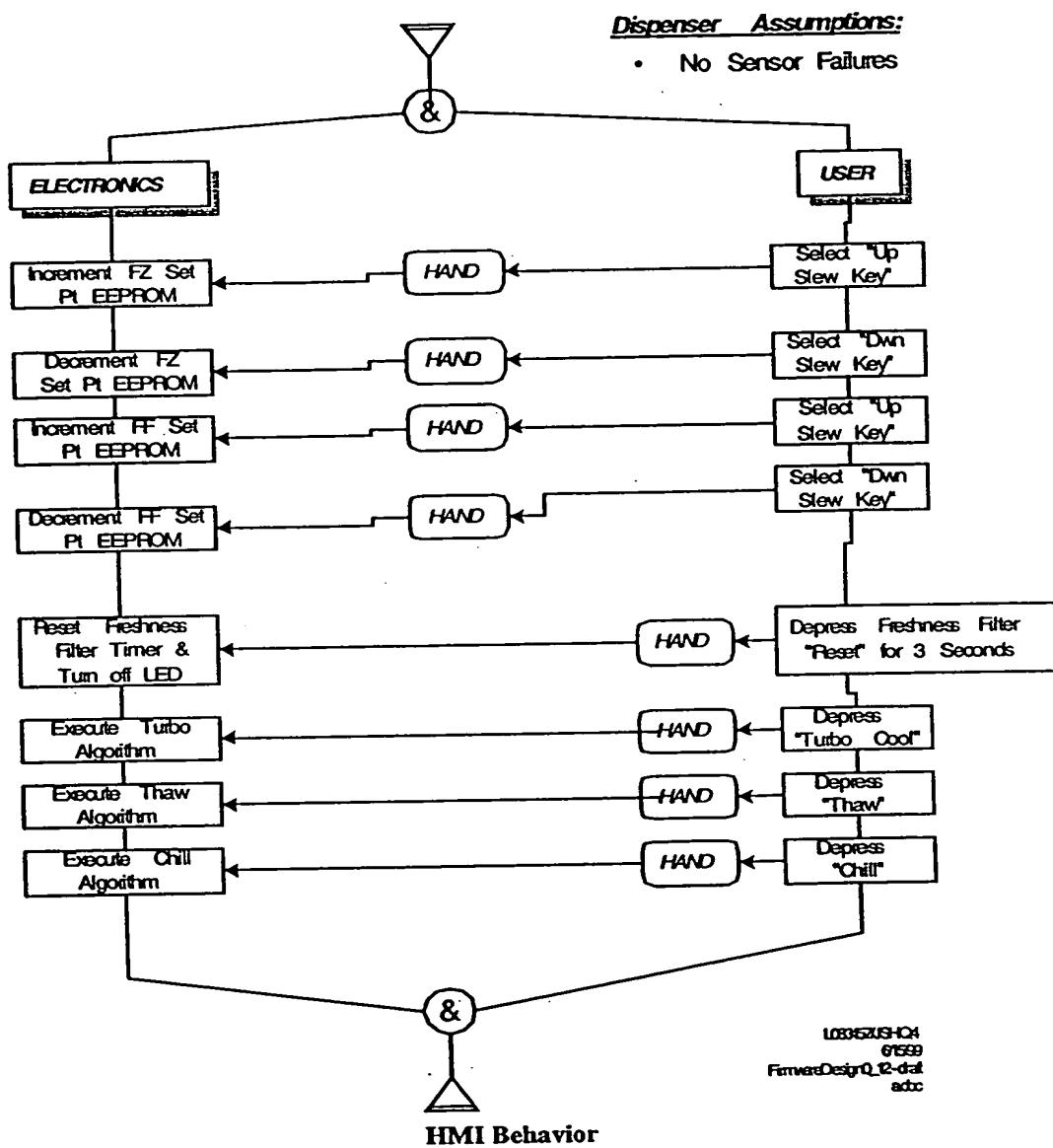
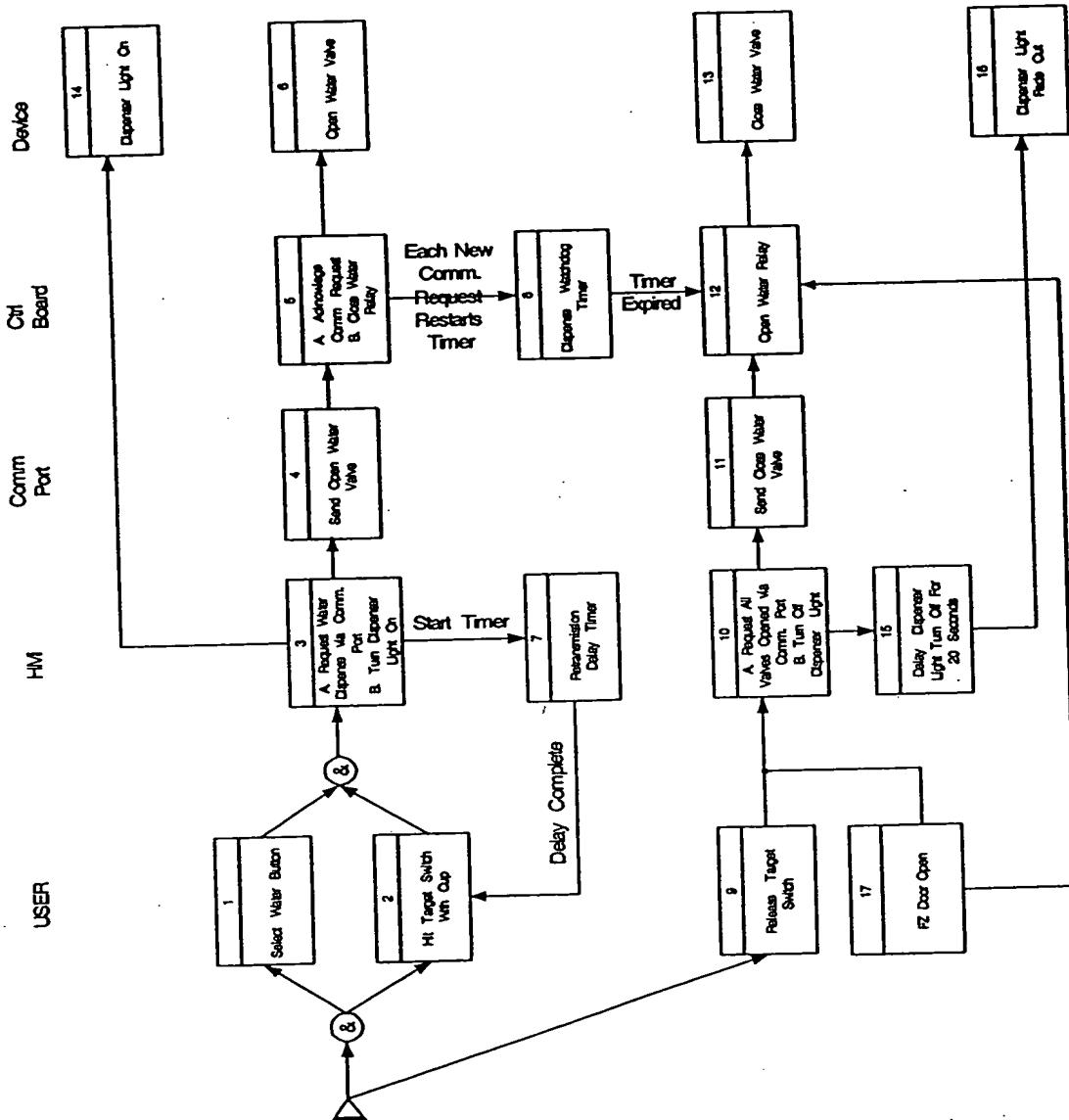


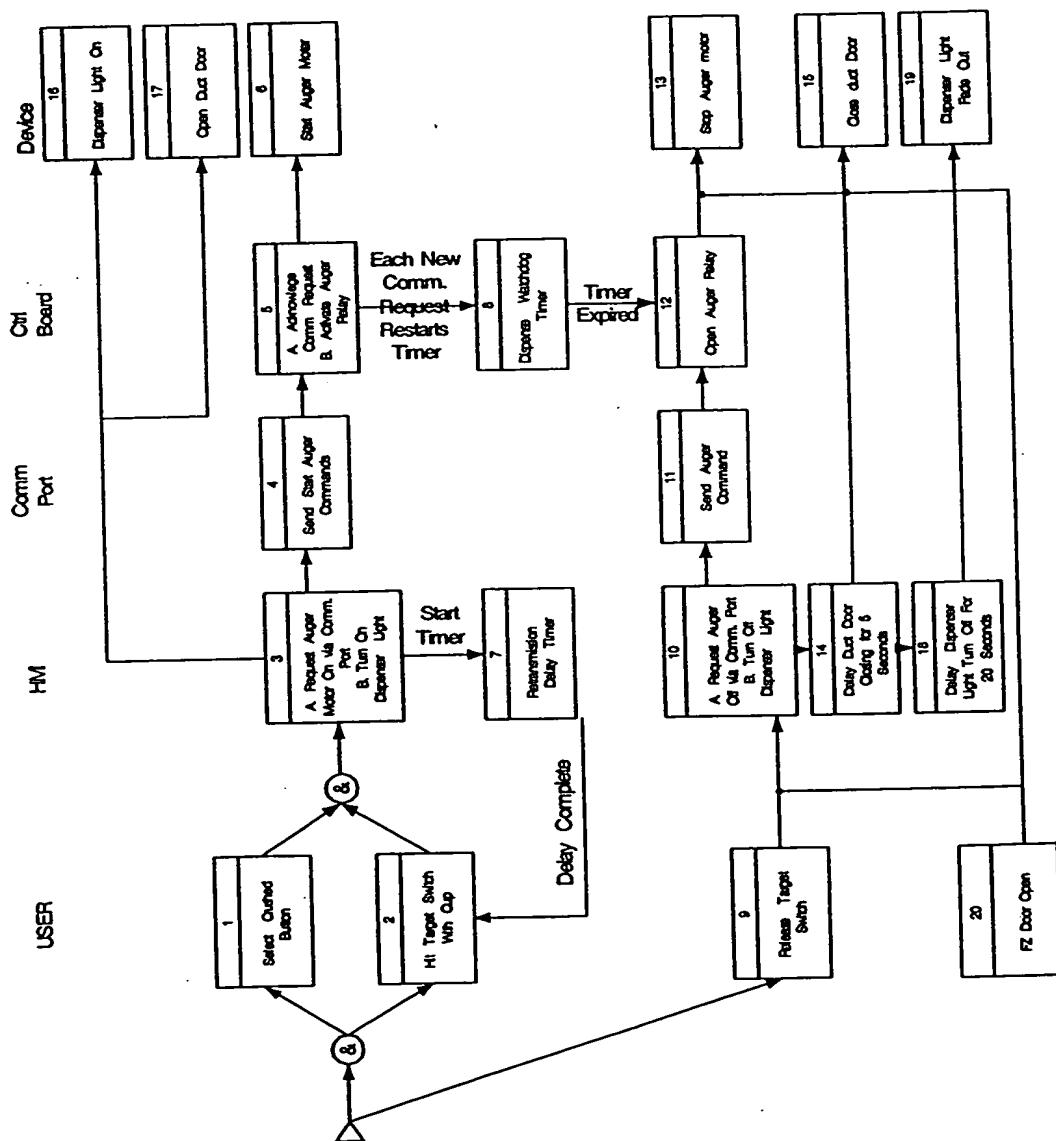
Fig 21



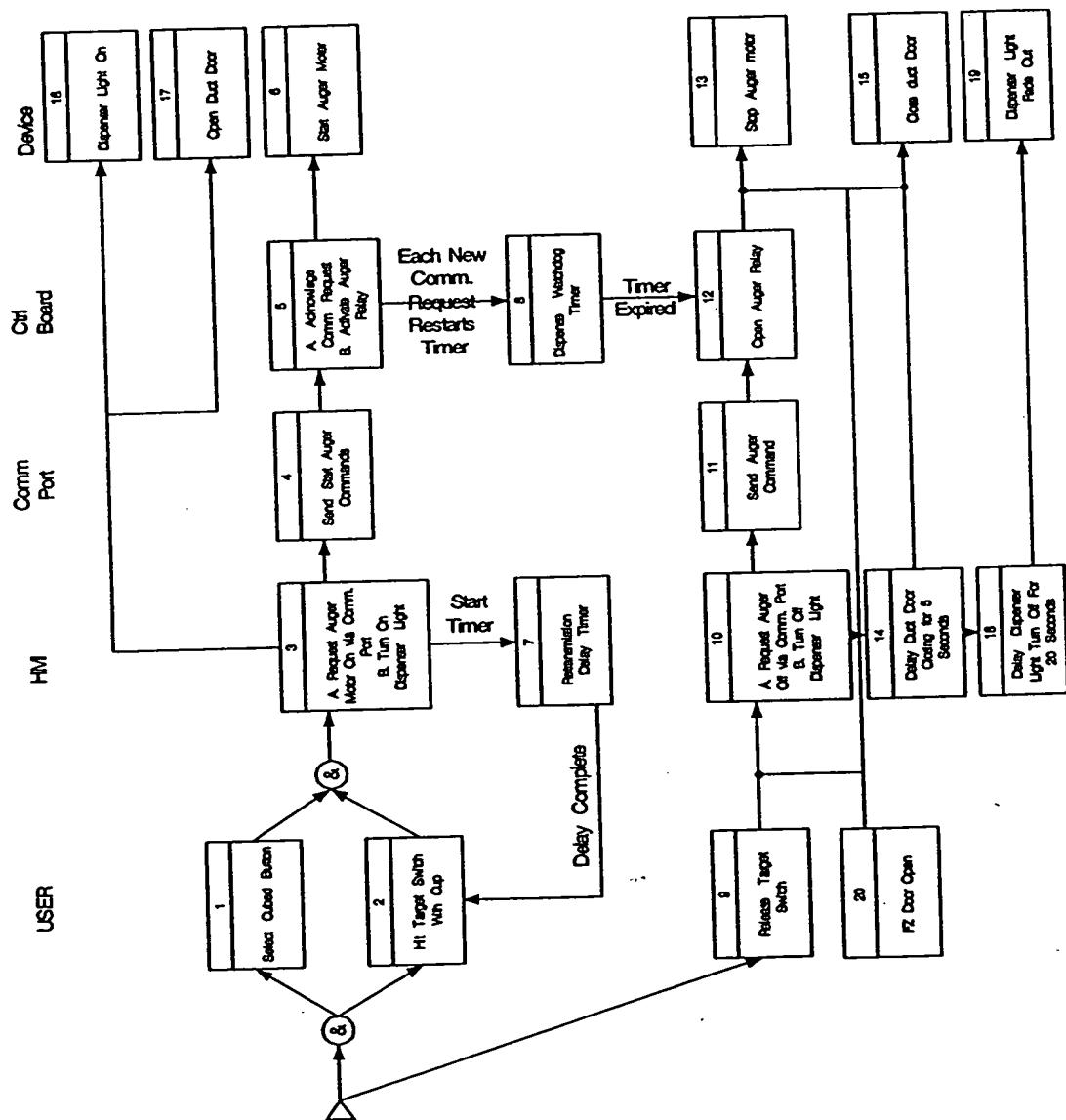
Water Dispenser Interactions

21/55

490



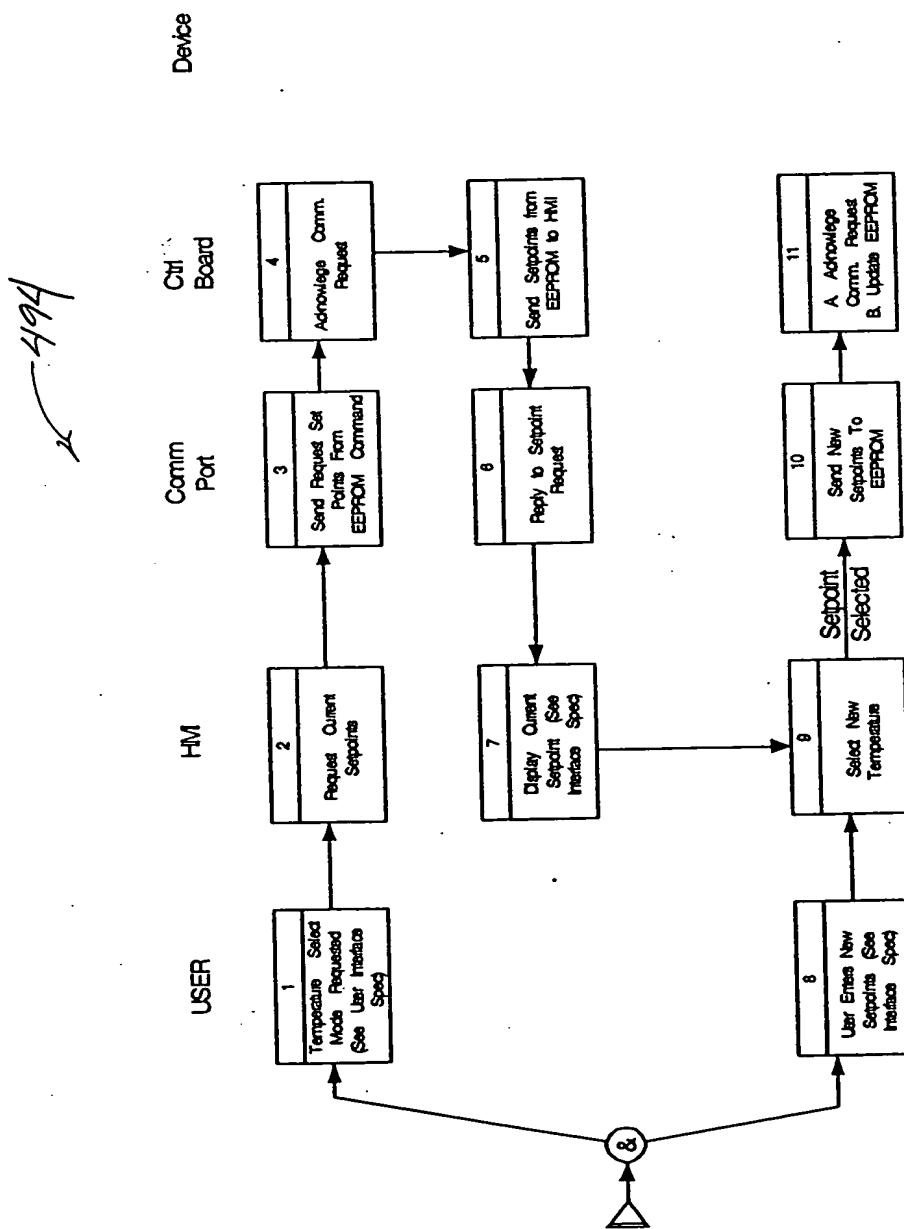
22/55



Cubed Ice Dispenser Interactions

F.3 84

28/55



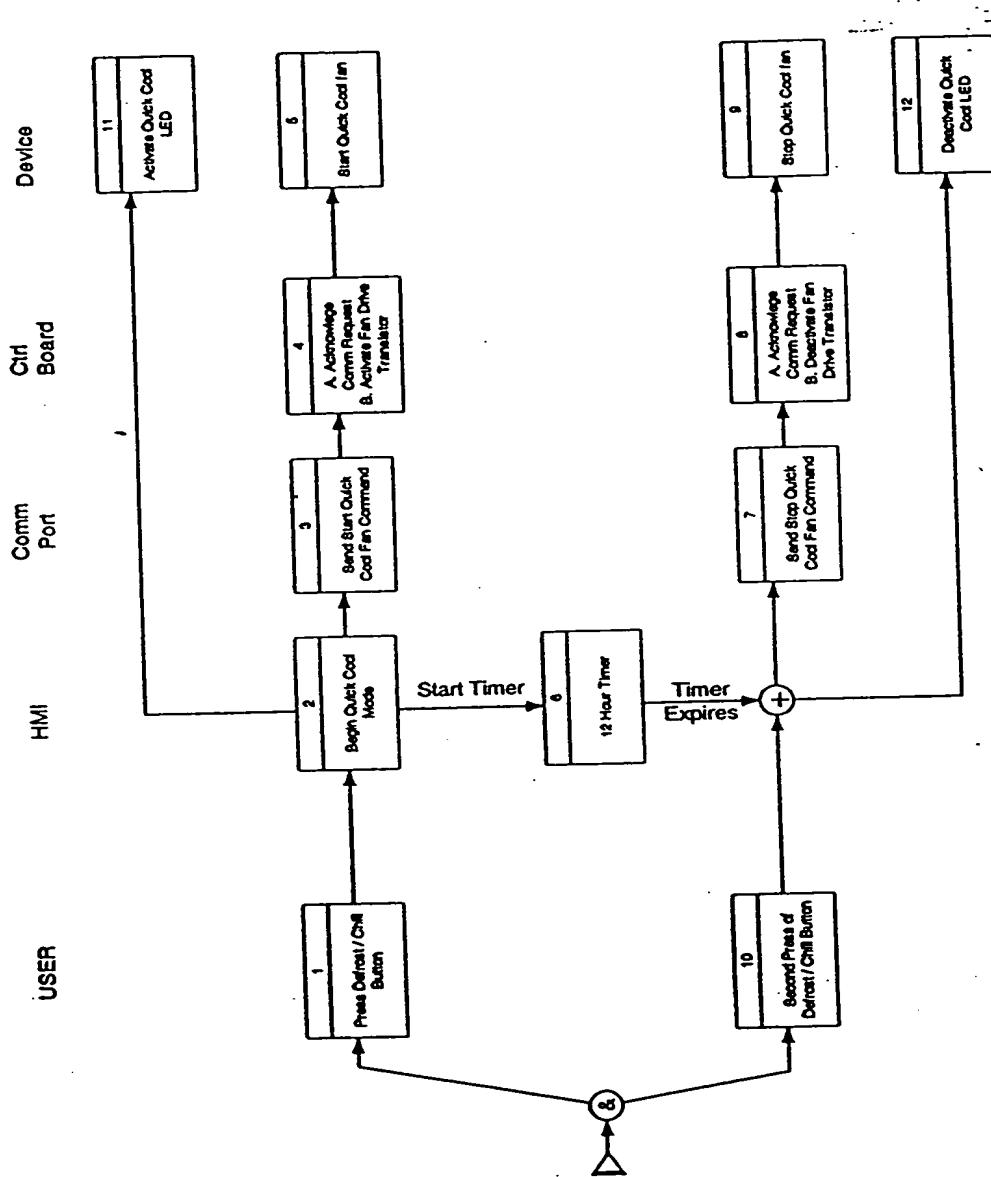
NOTE: Setpoint Selected implies that the final selection has been made and that the selection has timed out

Temperature Setting Interaction Diagrams

F1, G5

24/55

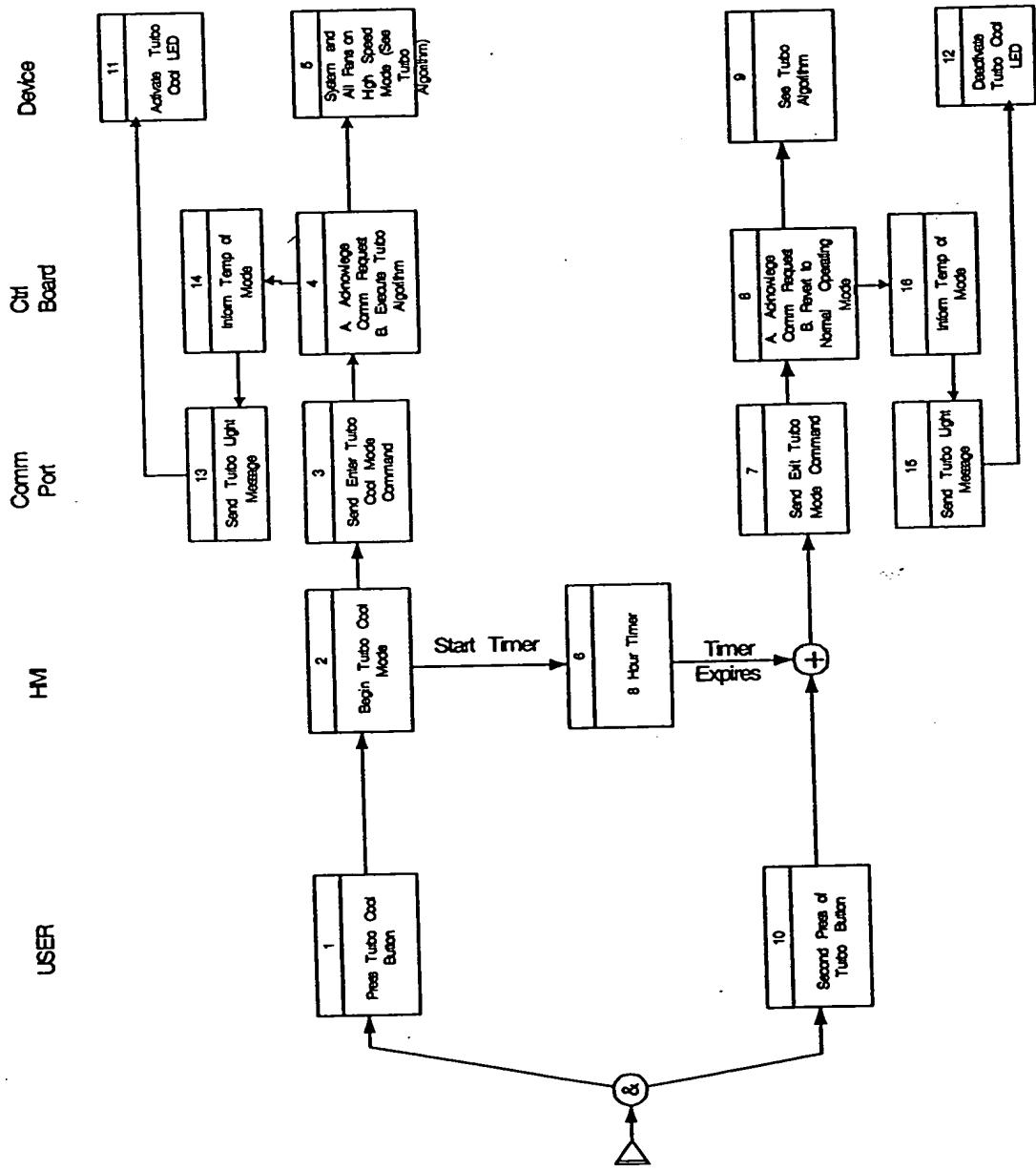
496
496
496
496
496



Quick Chilli Interaction Diagram

Fig 24

25/55

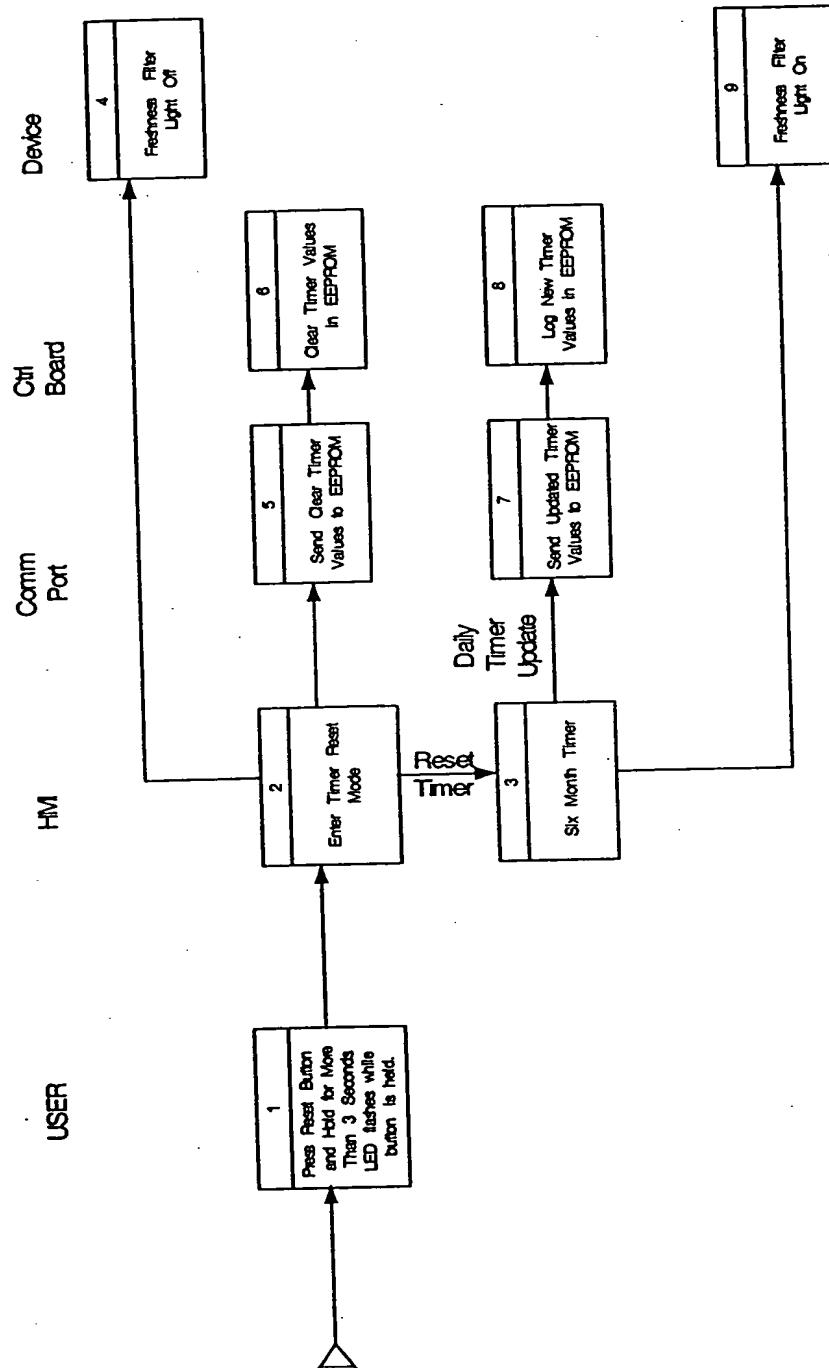


Turbo Mode Interaction Diagram

F. 19 27

26/55

500
Press Reset Button and Hold for More Than 3 Seconds LED flashes while button is held.

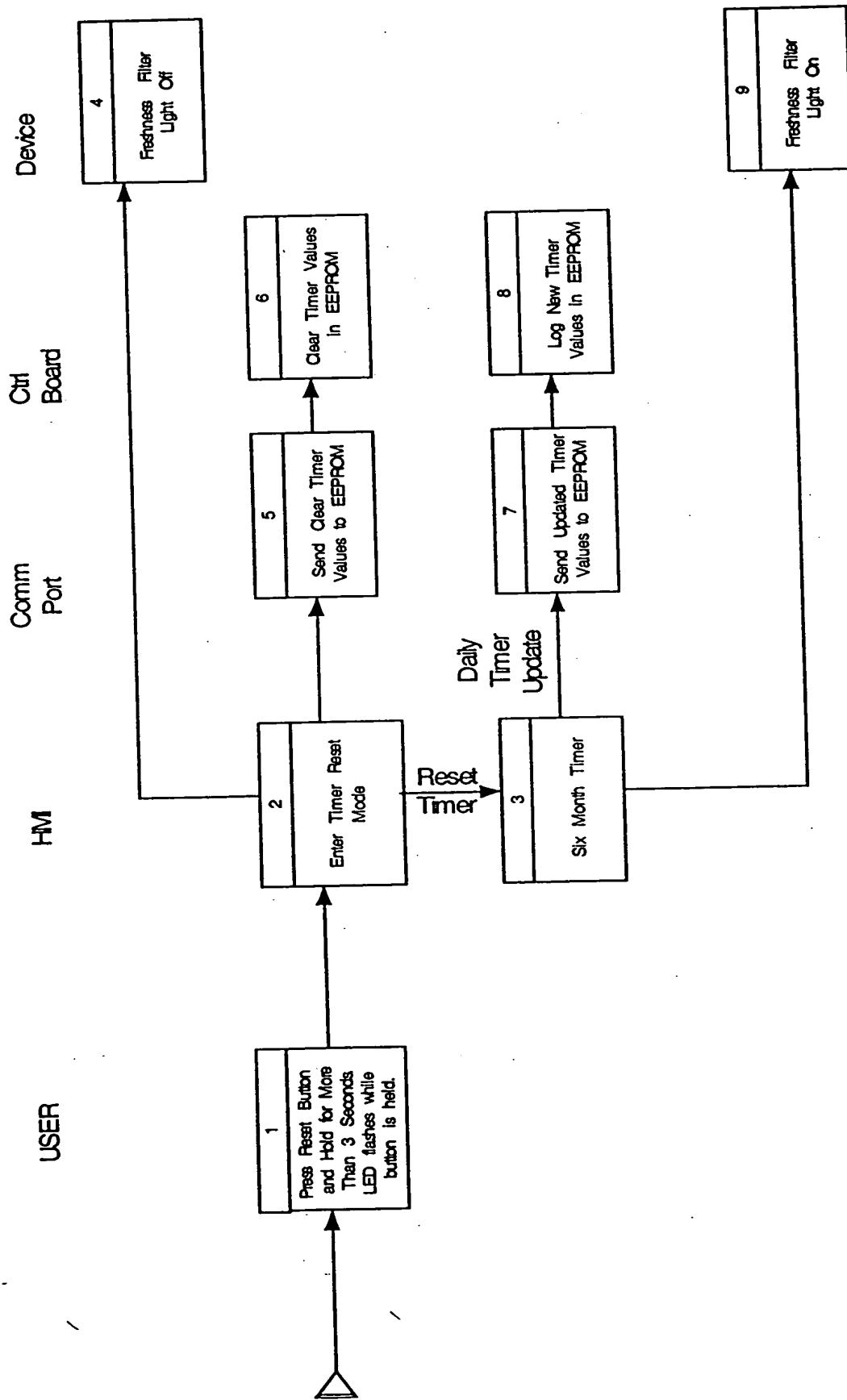


Freshness Filter Reminder Interaction

Fig 28

27/55

Water Filter Reminder Interaction
Fig 29



Water Filter Reminder Interaction

Fig 29

28/55

504

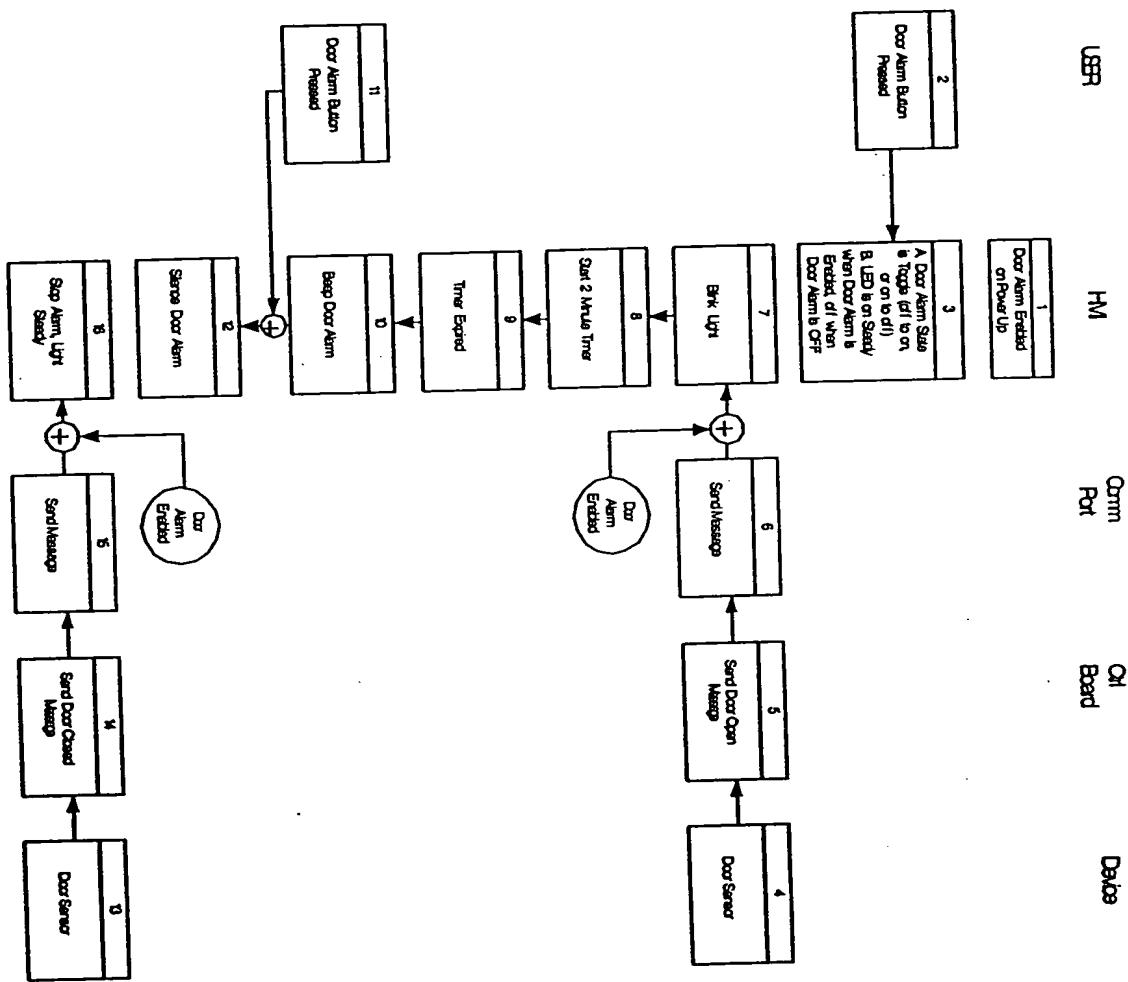
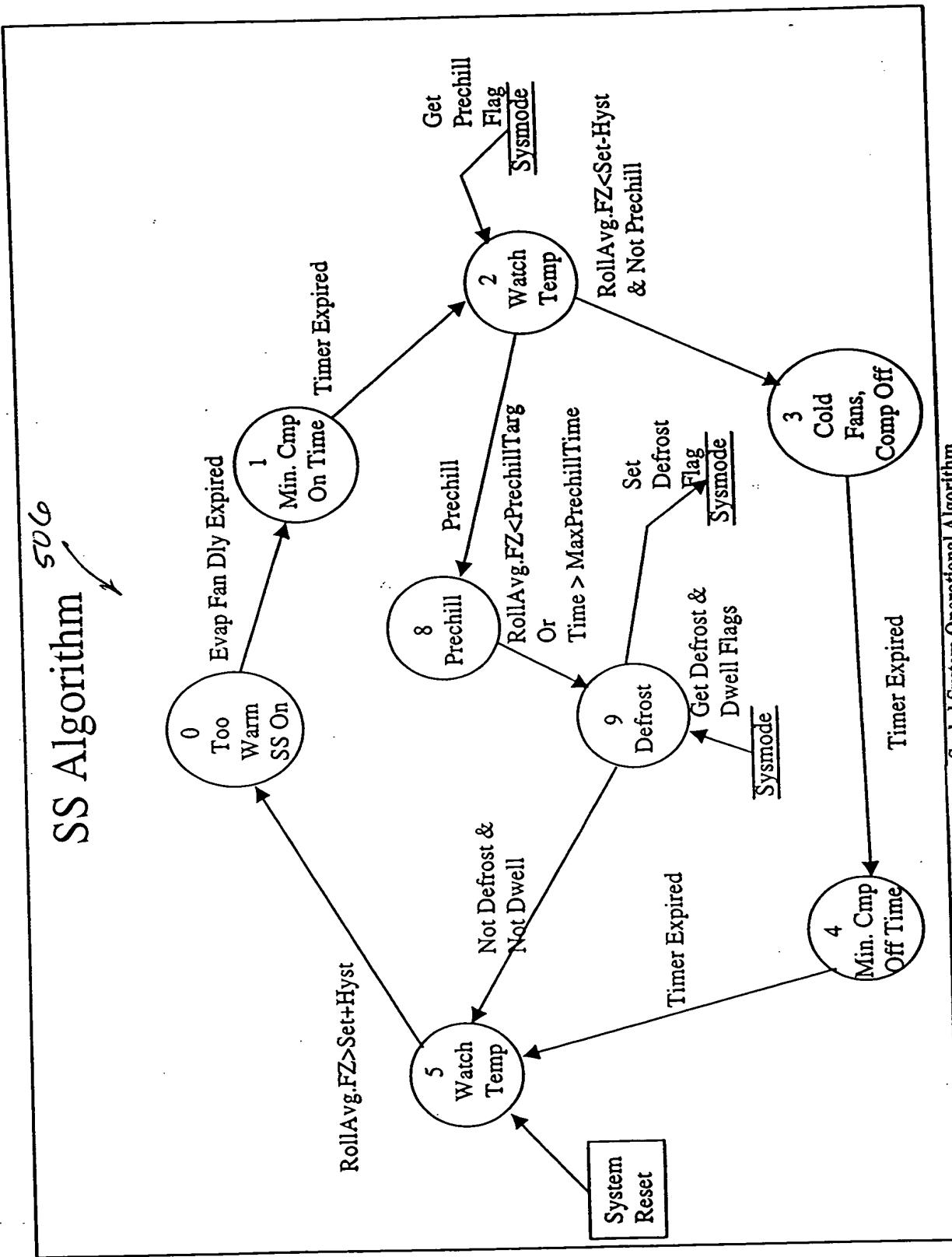


Fig 30

Door Open Interaction Diagram

SS Algorithm

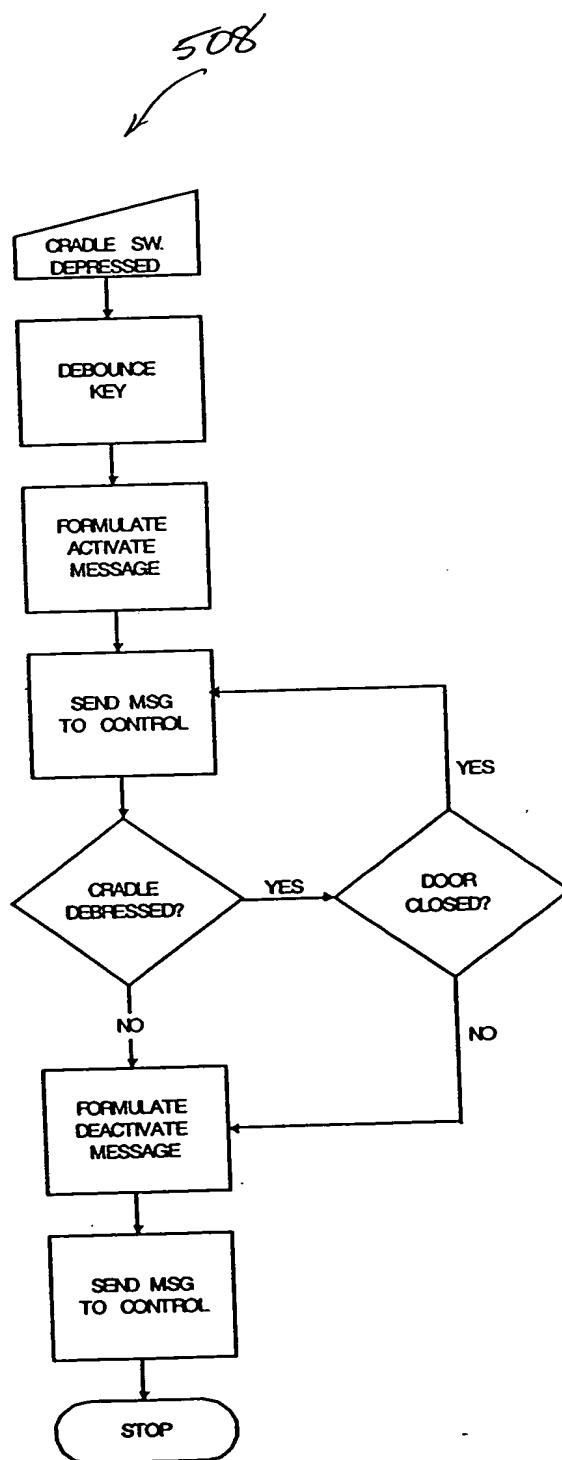


SS/60

Figs 31

Sealed System Operational Algorithm

30/55

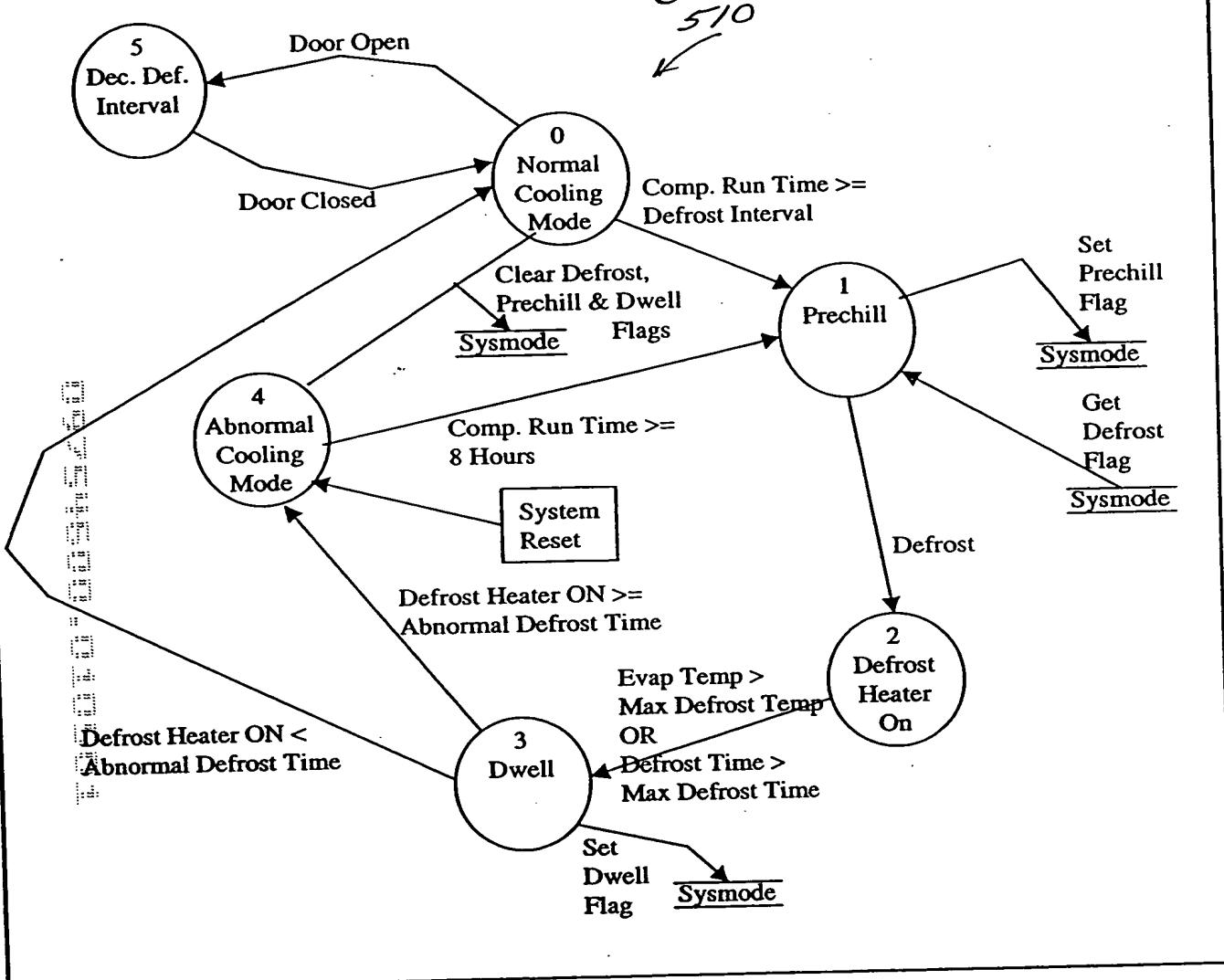


Dispenser Control Algorithm

Fig 32

31/55

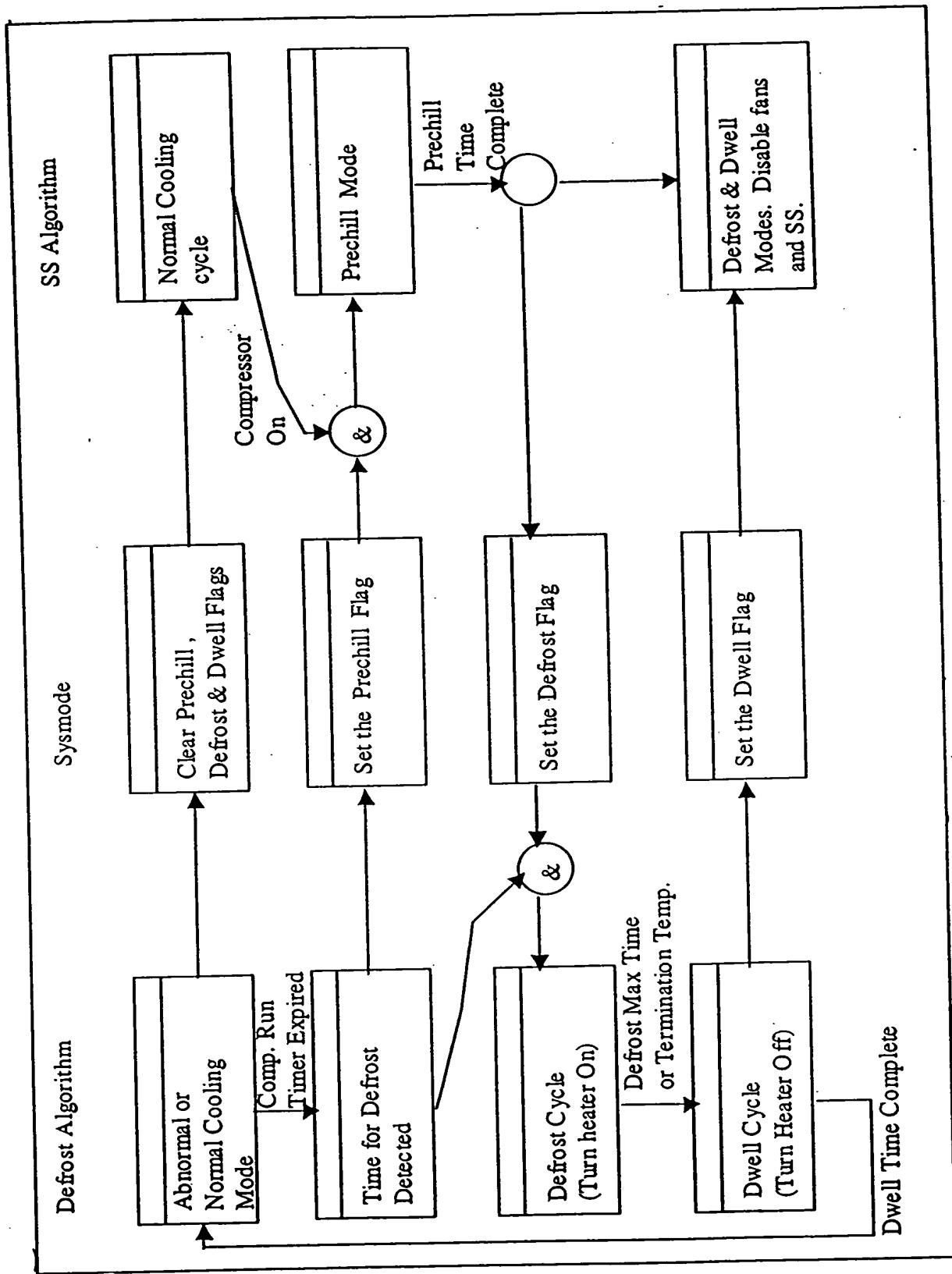
Defrost Algorithm



Defrost Control State Diagram

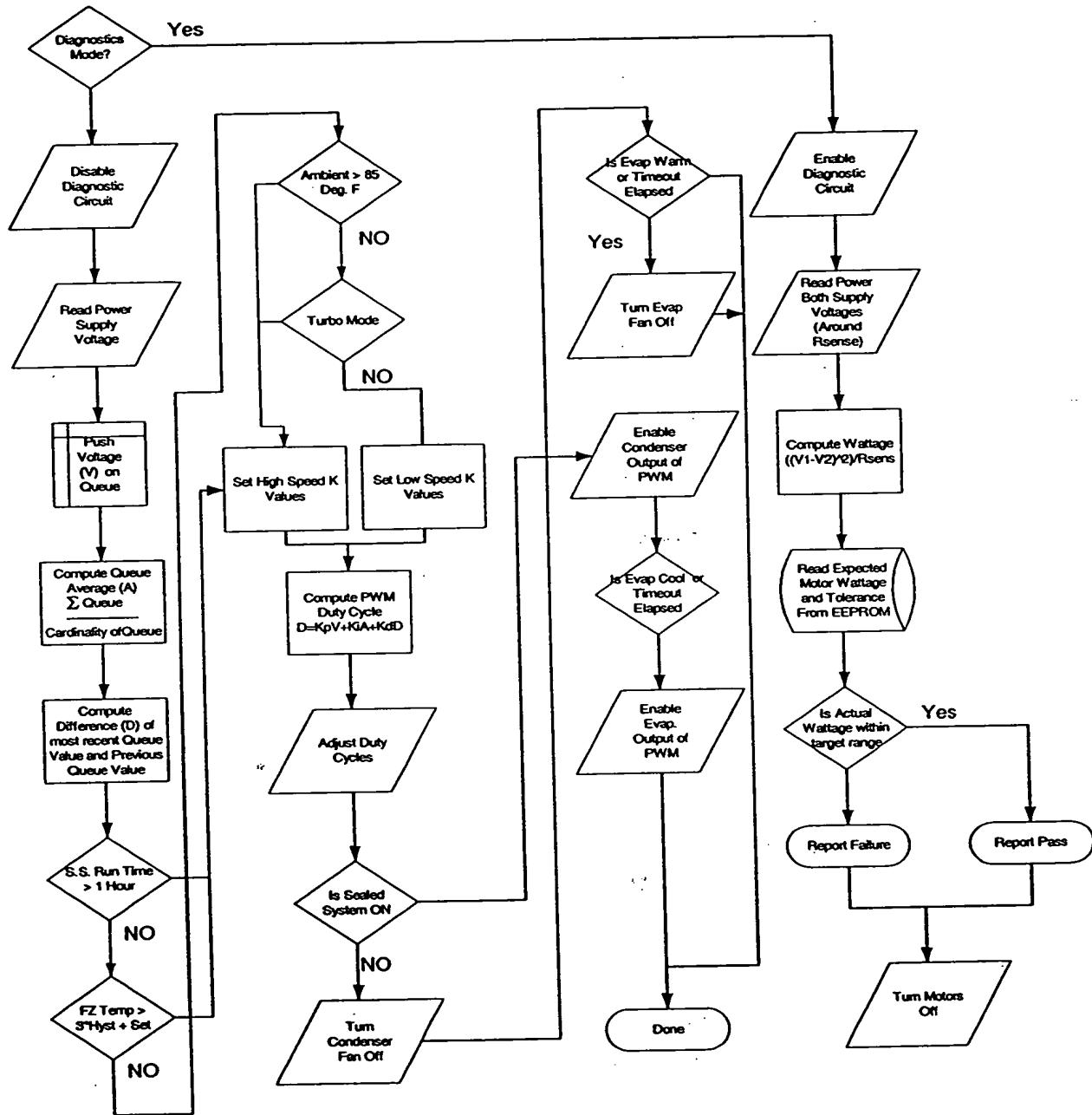
Fig 33

Fig 34



ss/22

Evap. & Cond. Fan Control:

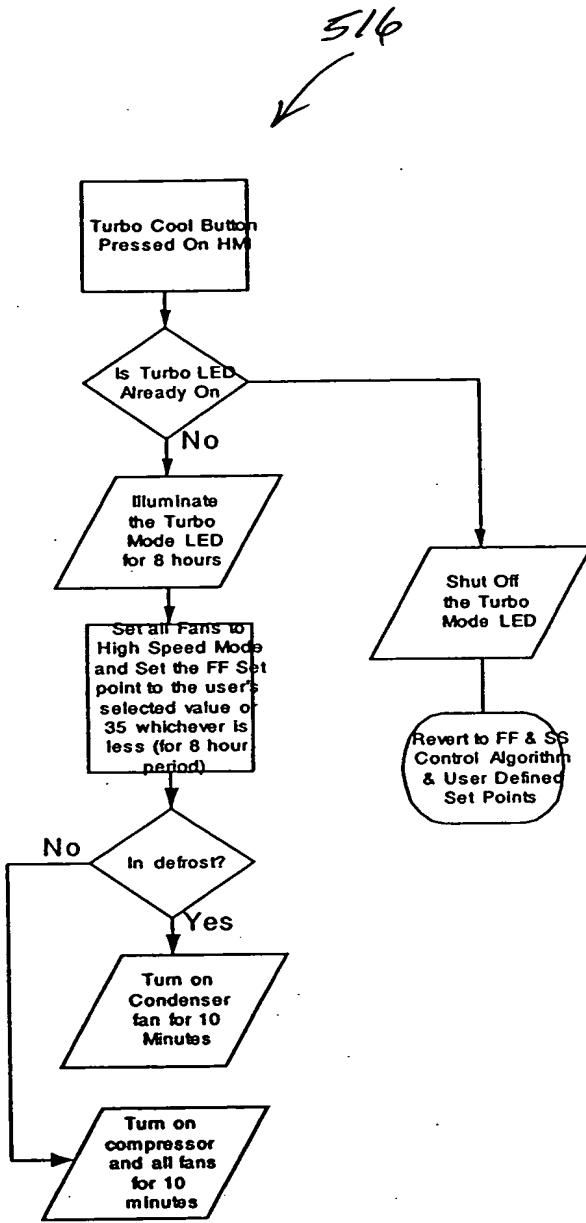


Fan Speed Control

Notes:

1. The FF & Evaporator fans will shut off for the first five minutes that the door is open.
2. Only one fan at a time can be on at a time during diagnostics.
3. Once the fan has been switched to high speed, it remains in that state until the operational cycle is complete.

FIG. 35

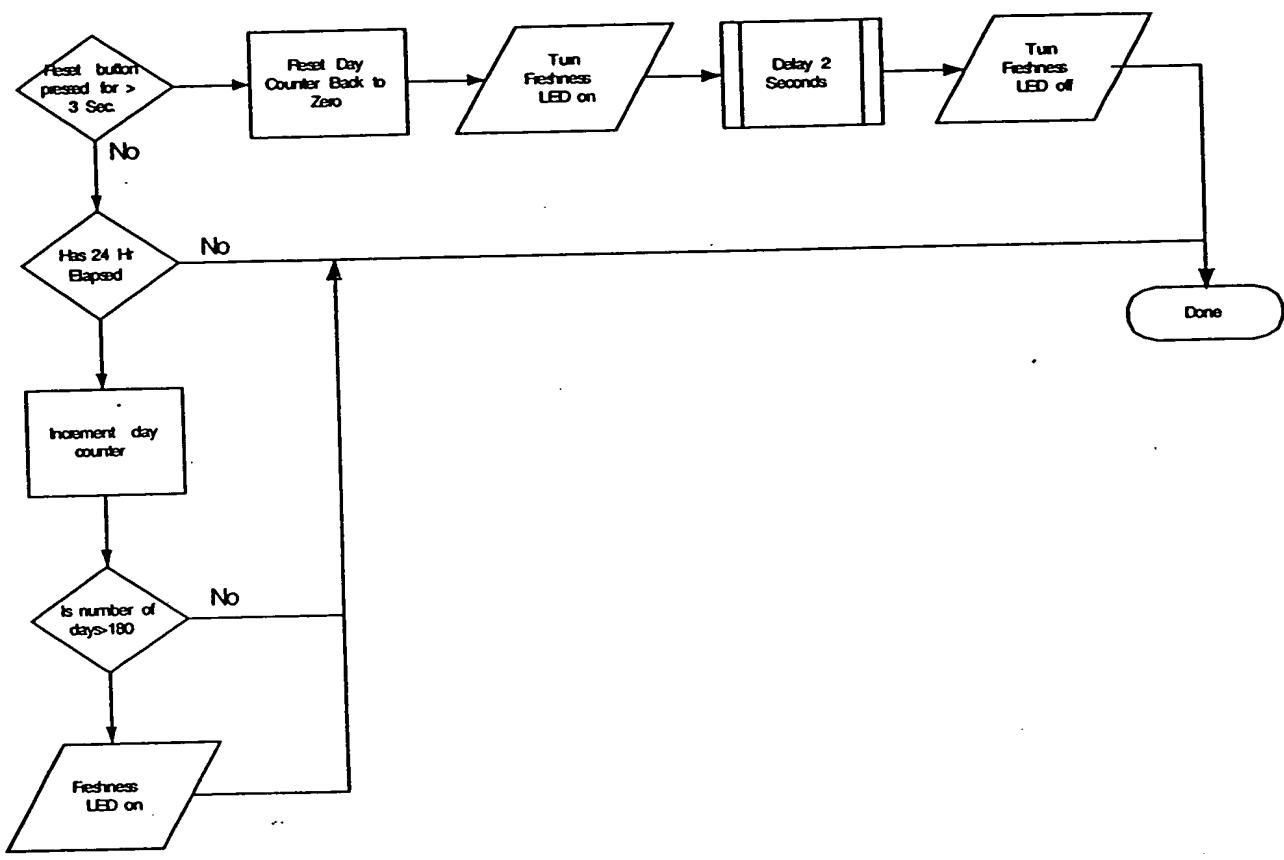


TURBO CYCLE ALGORITHM

Fig 36

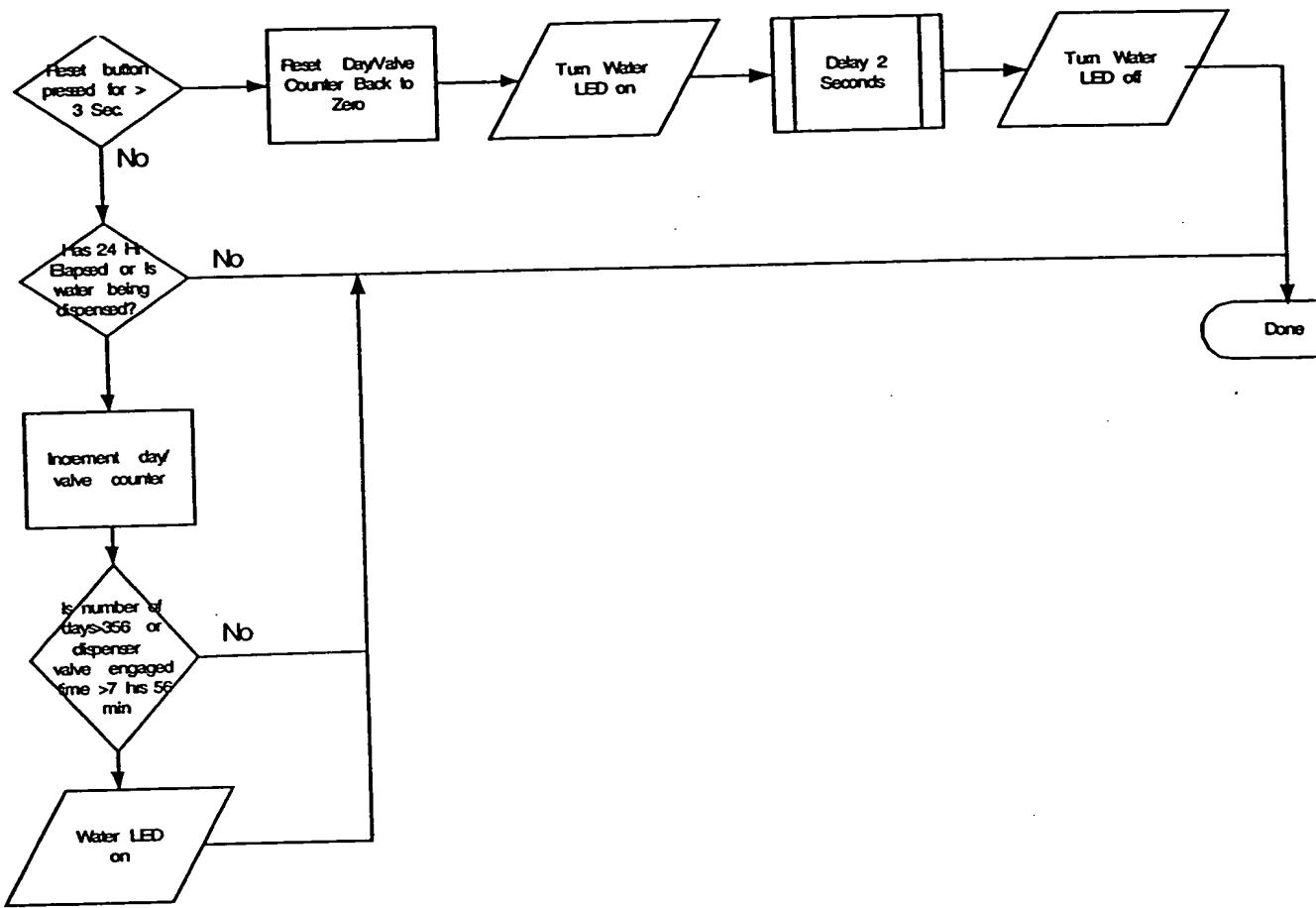
318

Change Freshness Filter:



Freshness Filter Reminder Algorithm

Fig 37

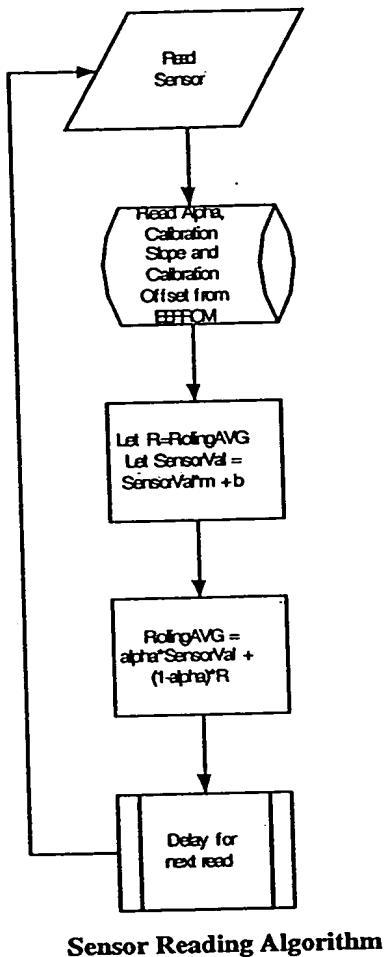


Water Filter Reminder Algorithm

F, 38

522

SENSOR READ AND ROLLING AVERAGE ALGO:



Sensor Reading Algorithm

NOTE:

Fresh food average uses this algorithm twice to create a 2nd pole filter.

Fig 39

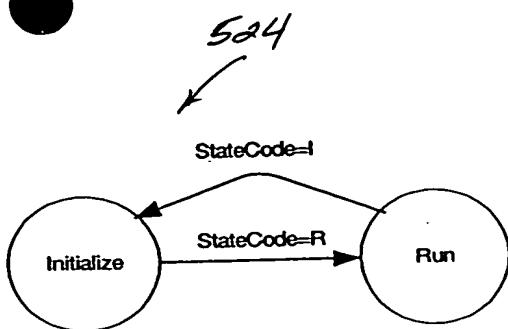


Fig. 40

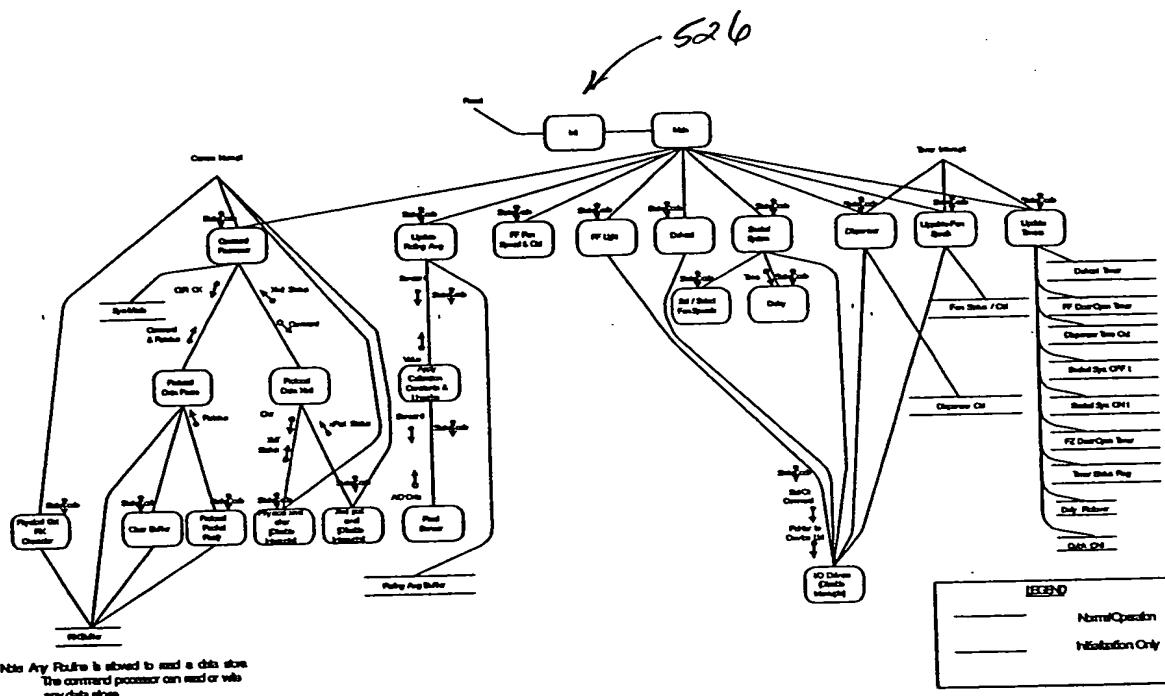
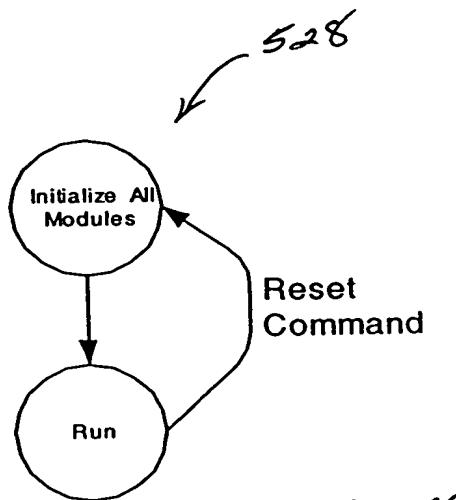


Fig. 41



STATE DIAGRAM FOR MAIN CONTROL

Fig. 42

DRAFTING BY DIPAK

HMI MAIN STATE MACHINE

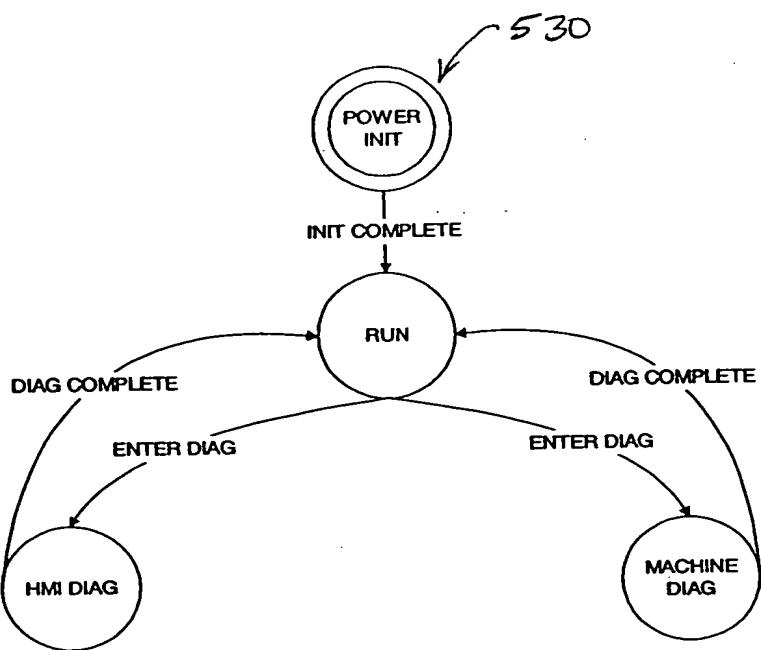
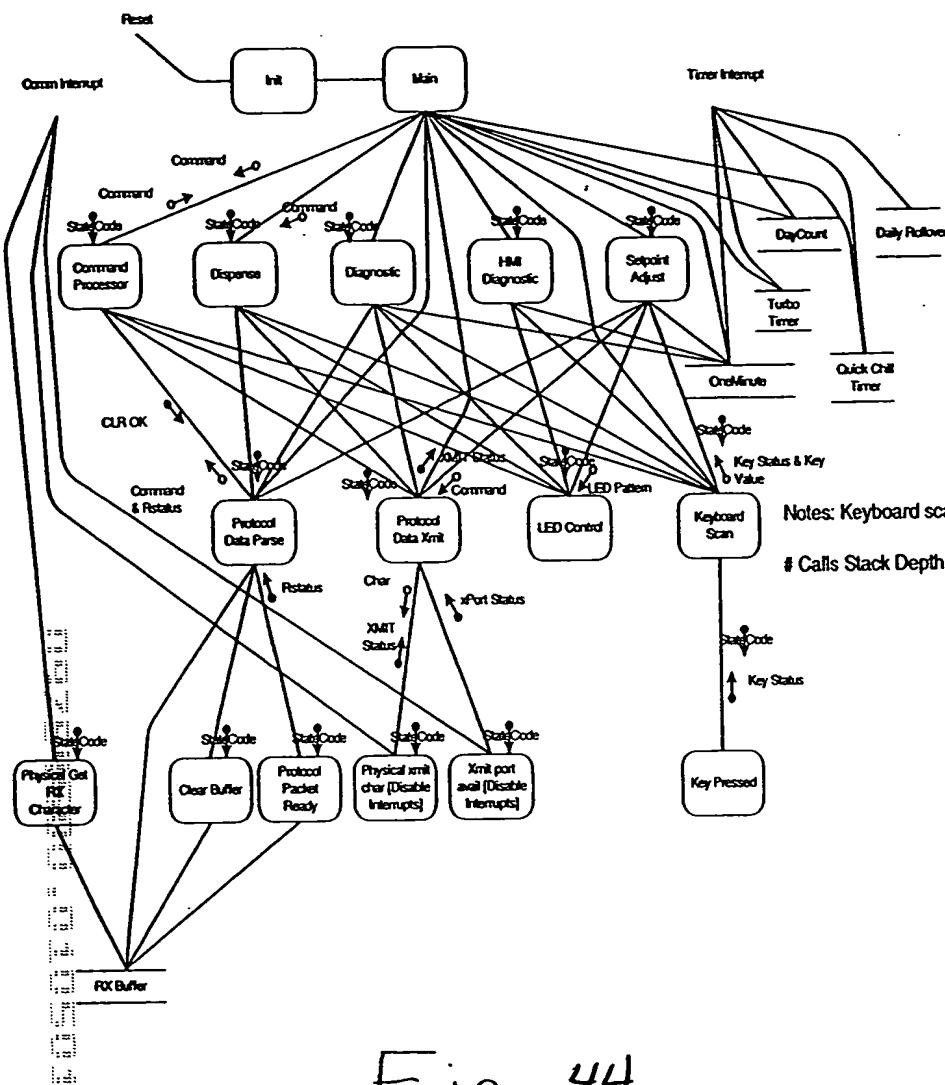


Fig. 43

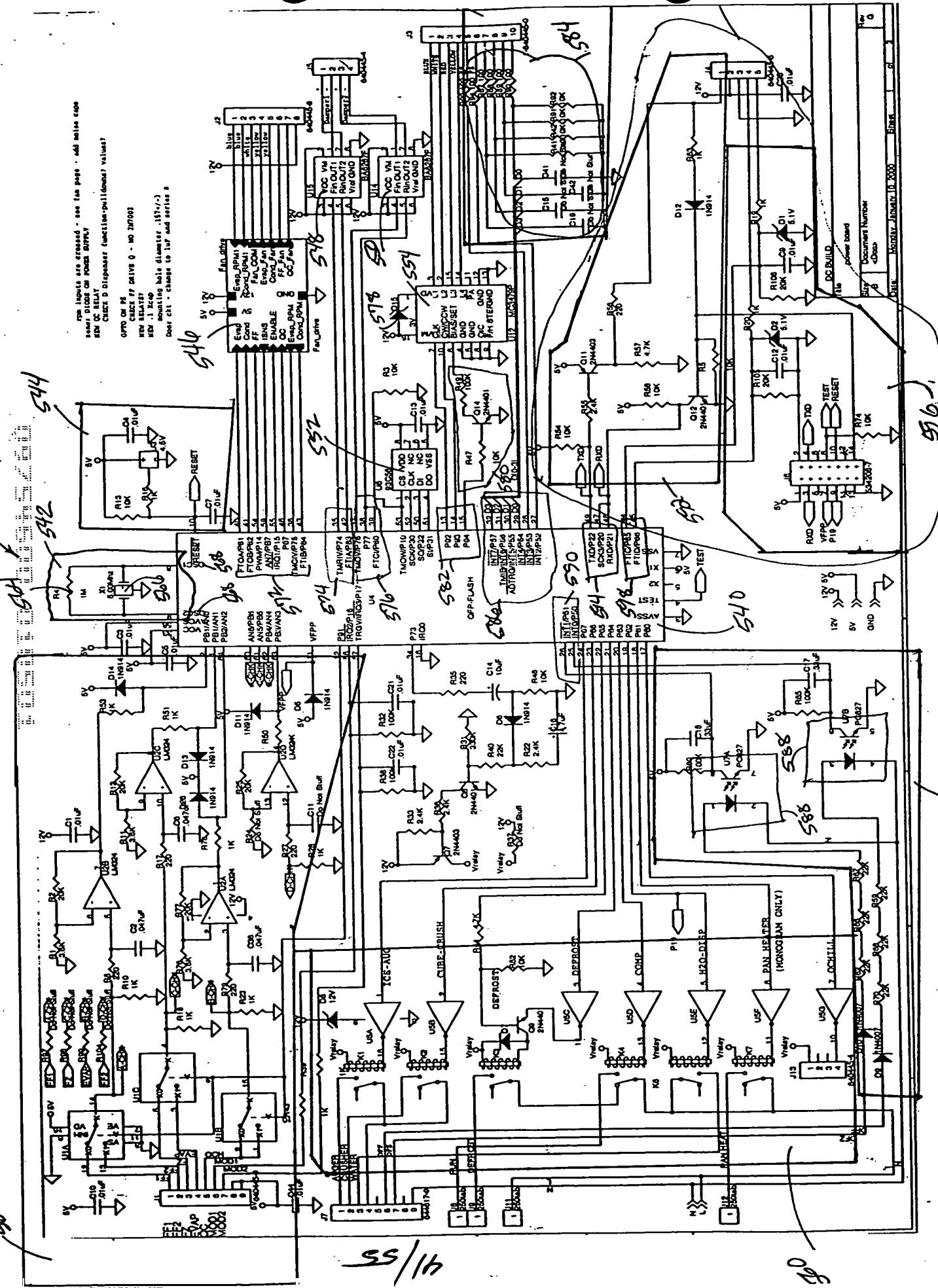
HMI Structure

532



Notes: Keyboard scan should return the last key hit and whether a key is presently being pressed.
Calls Stack Depth: Main->Diag->KeyboardScan->KeyPressed->Com Interrupt -> Physical get character

Fig. 44



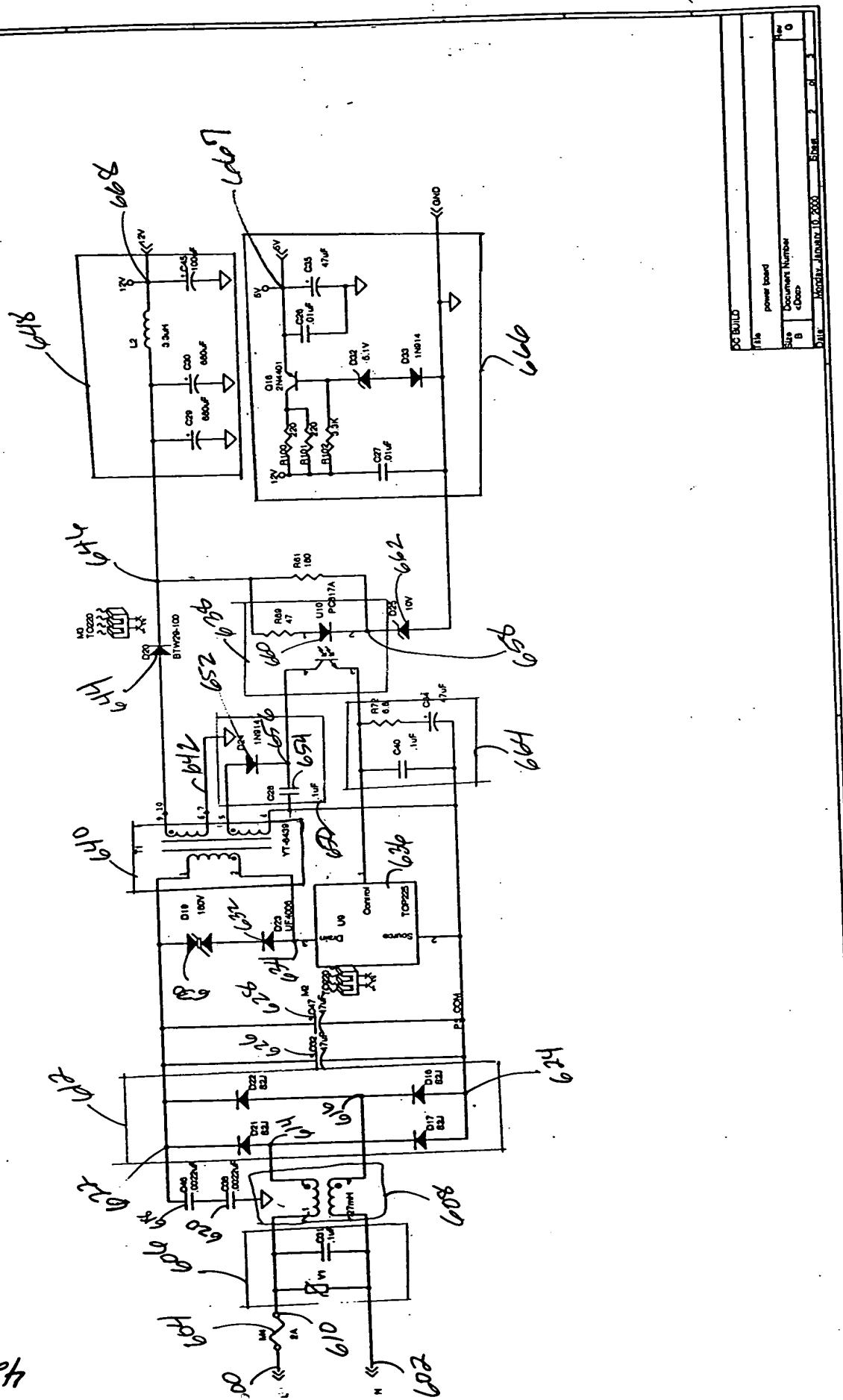
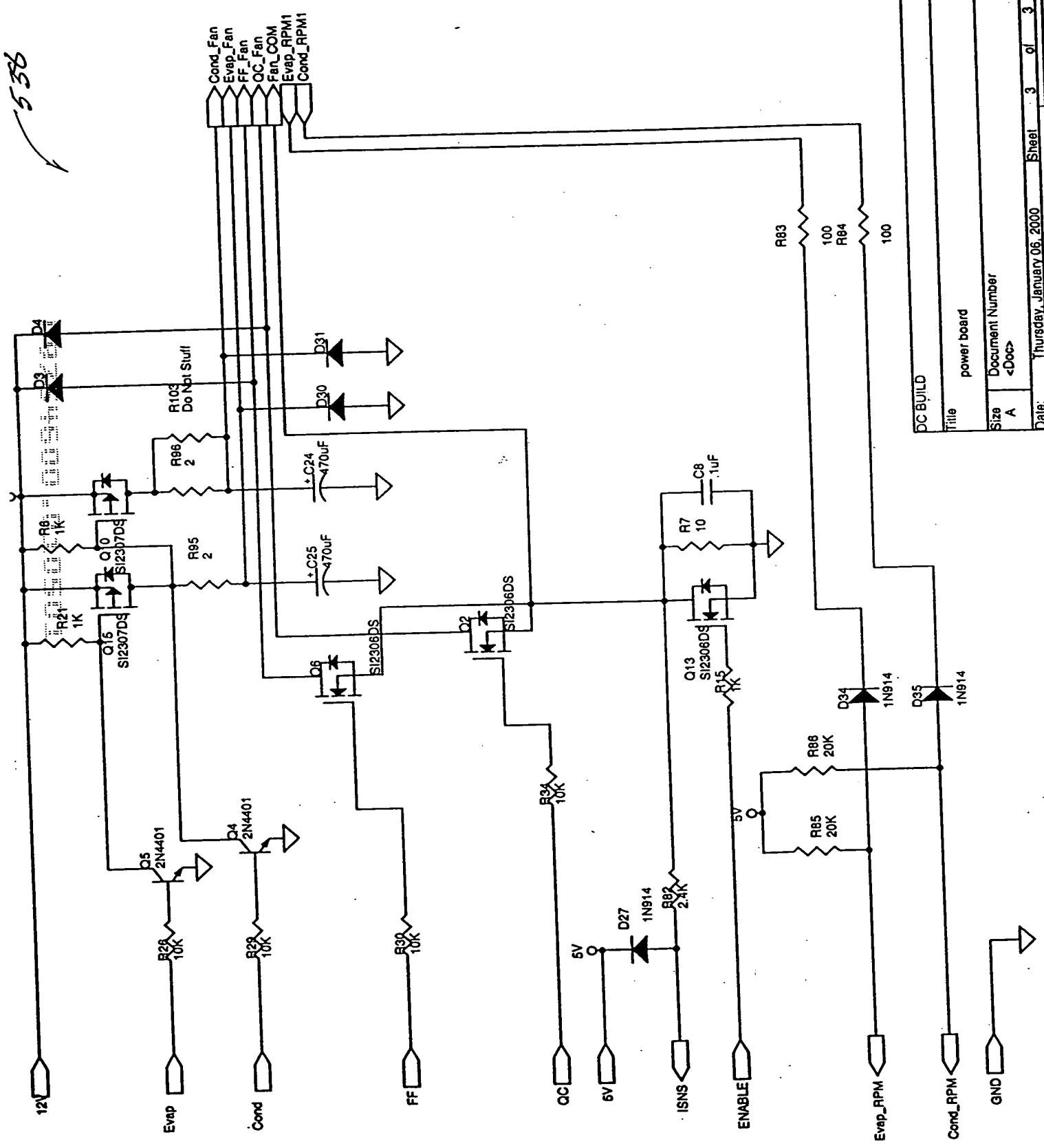


FIGURE 4/5

—536



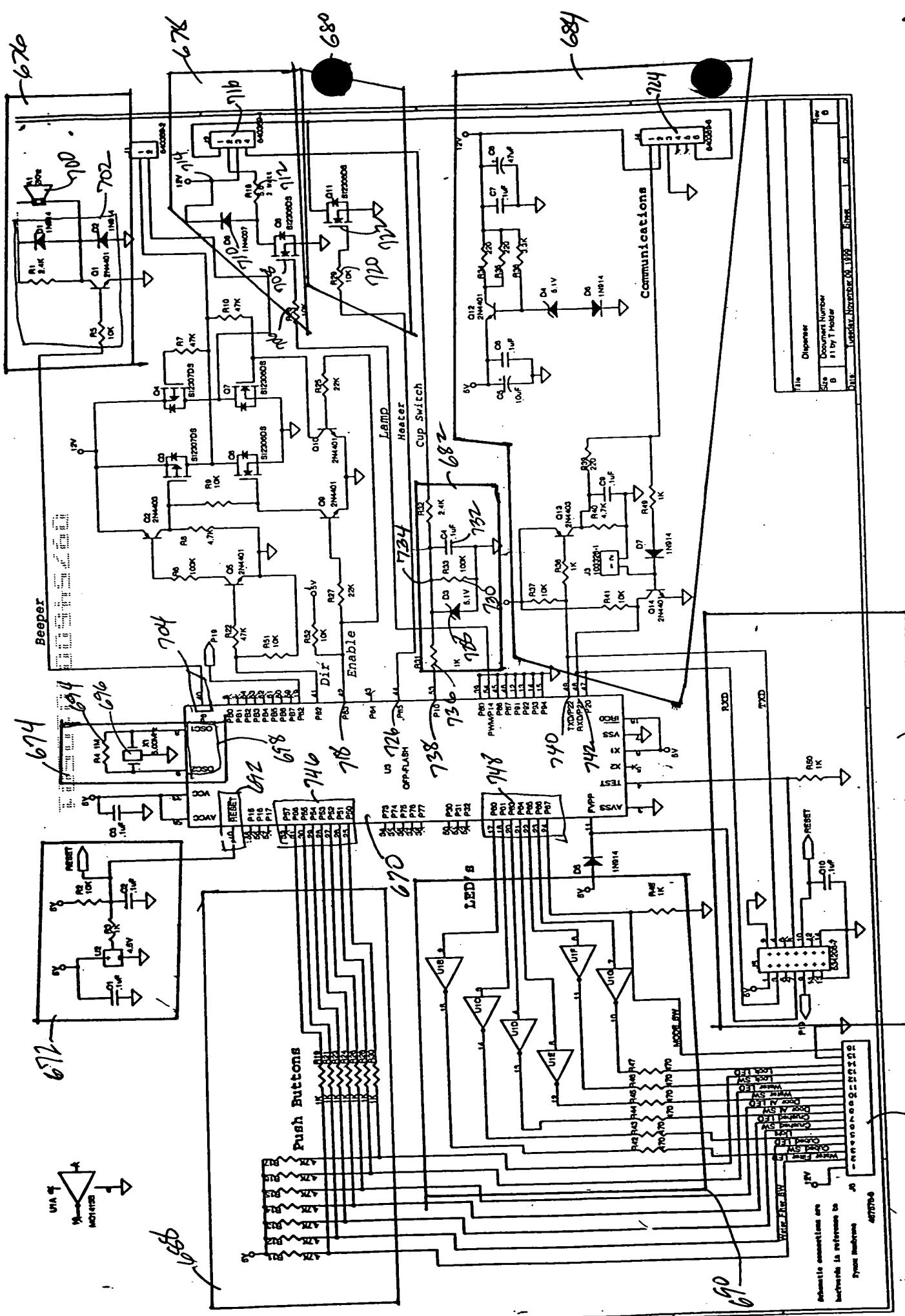


Figure 46

396

188

三

45/55

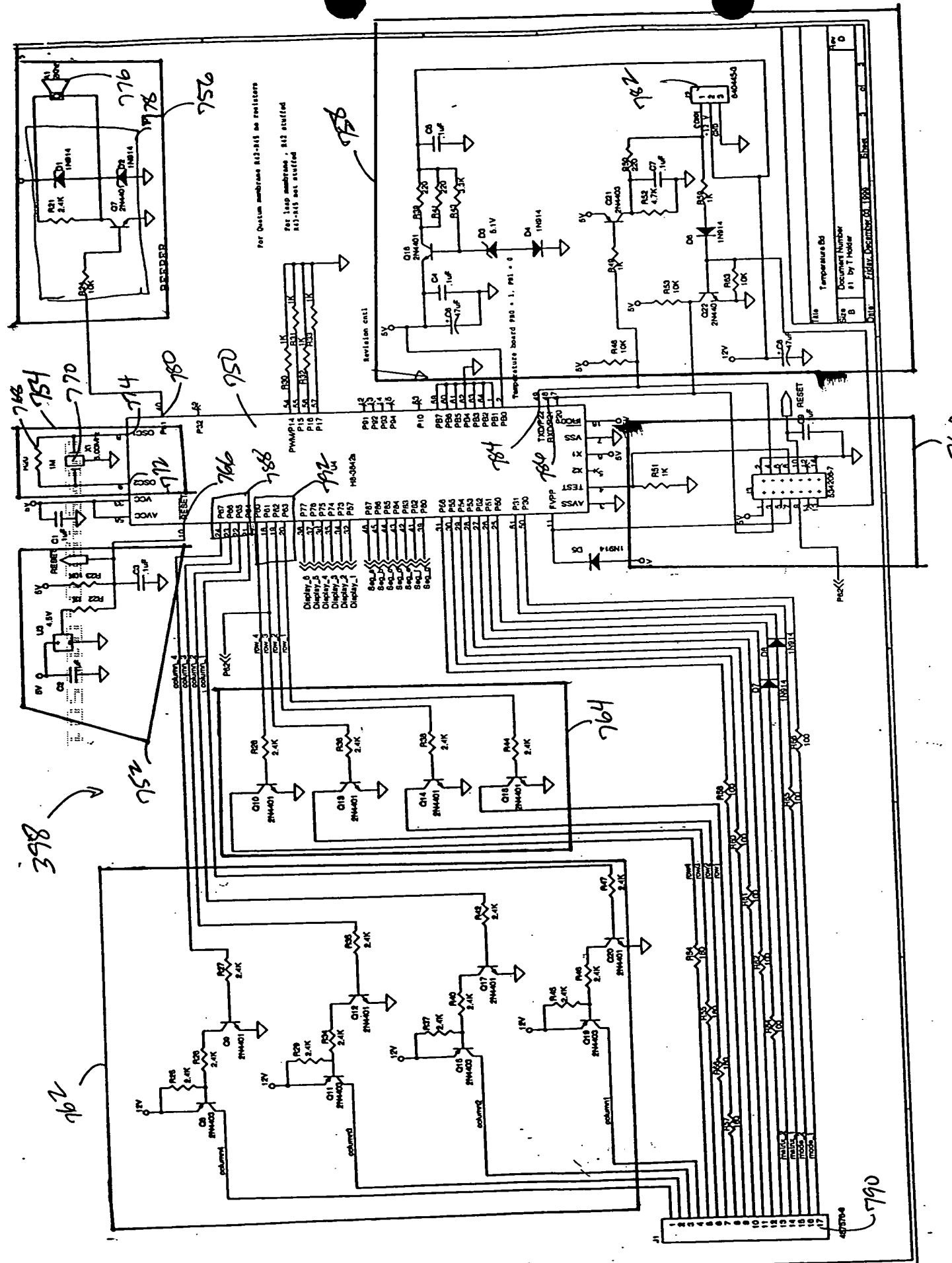


Figure 47

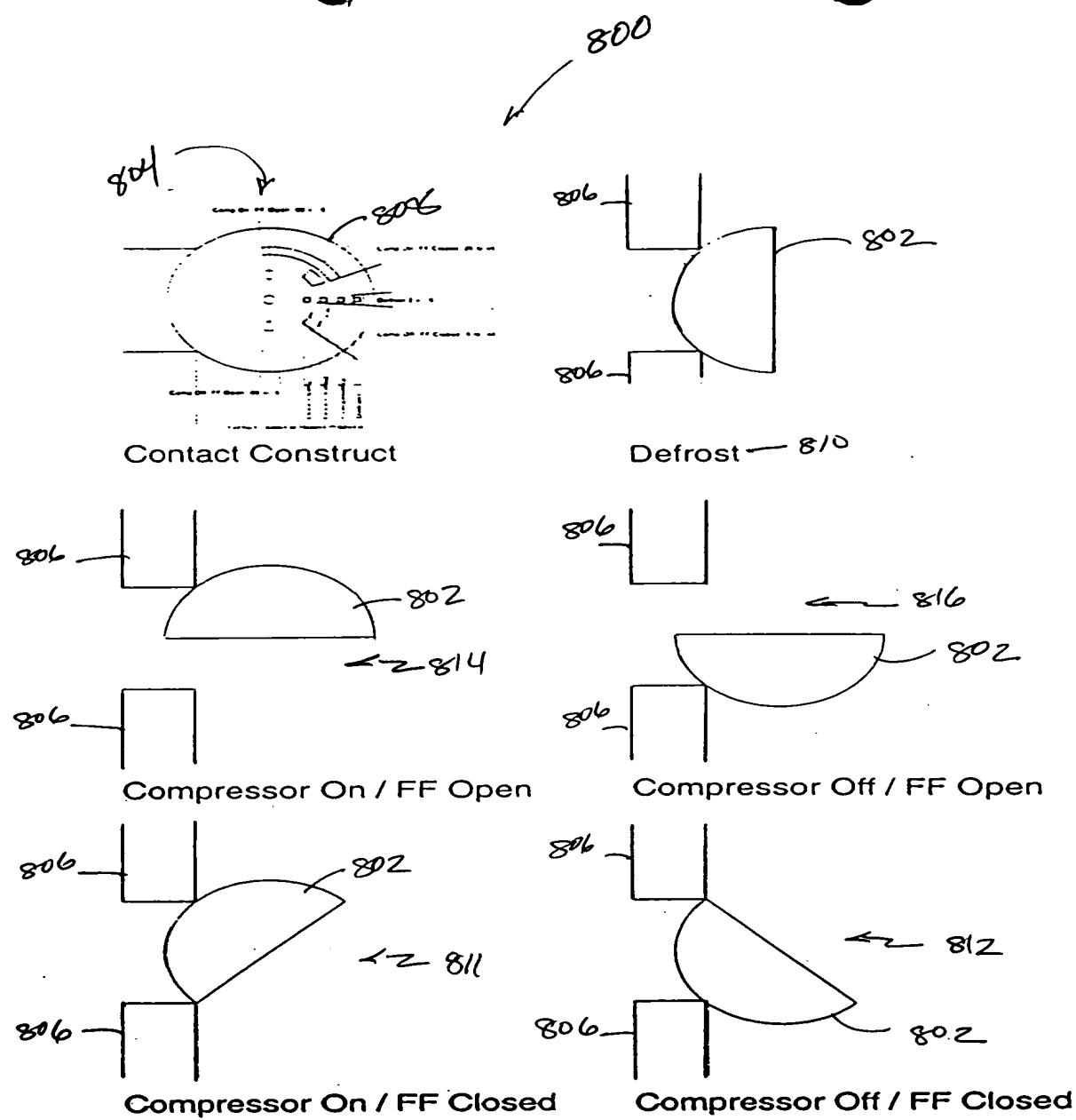
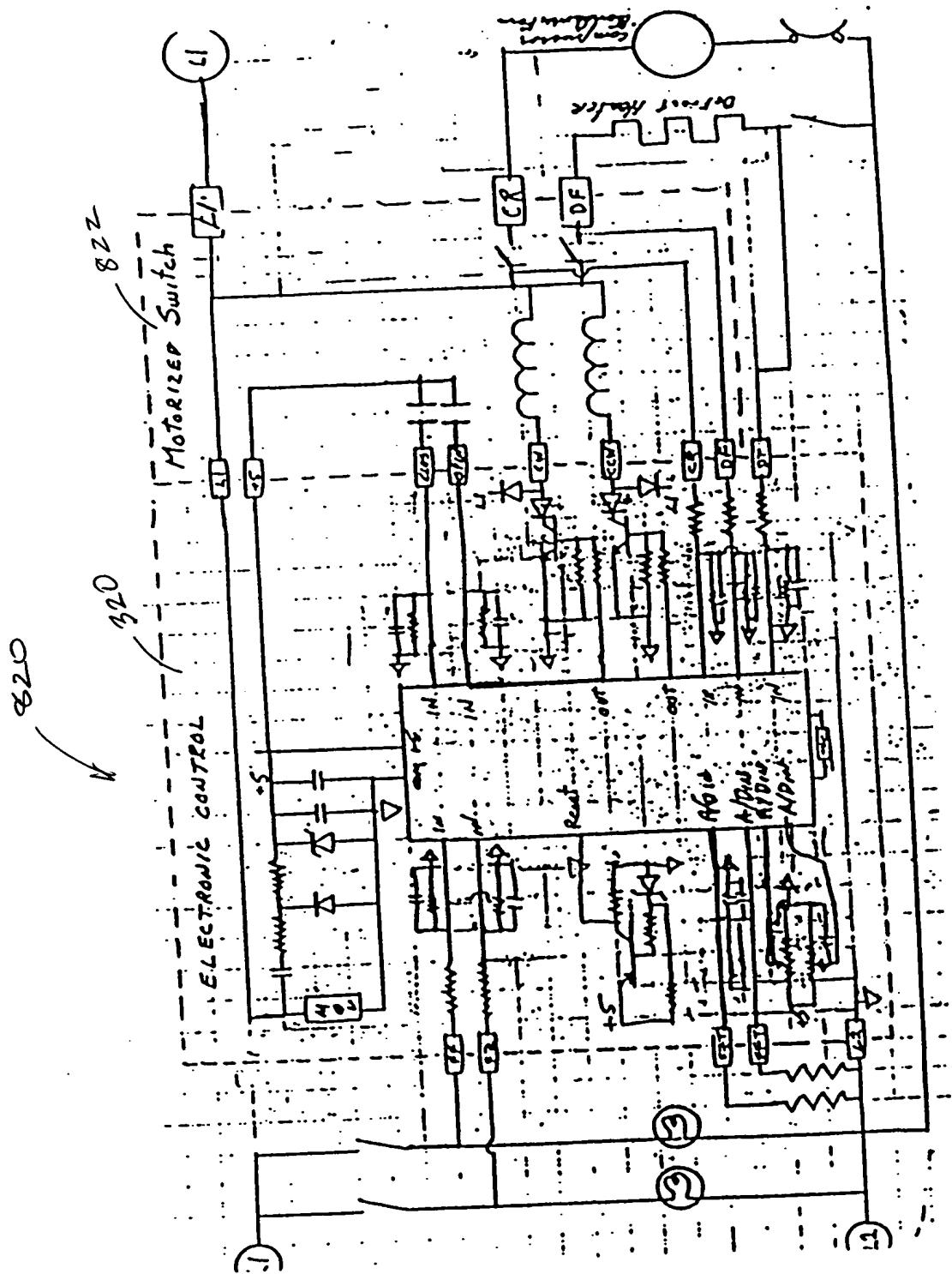


FIG. 48

47/55

F.I.G. 49



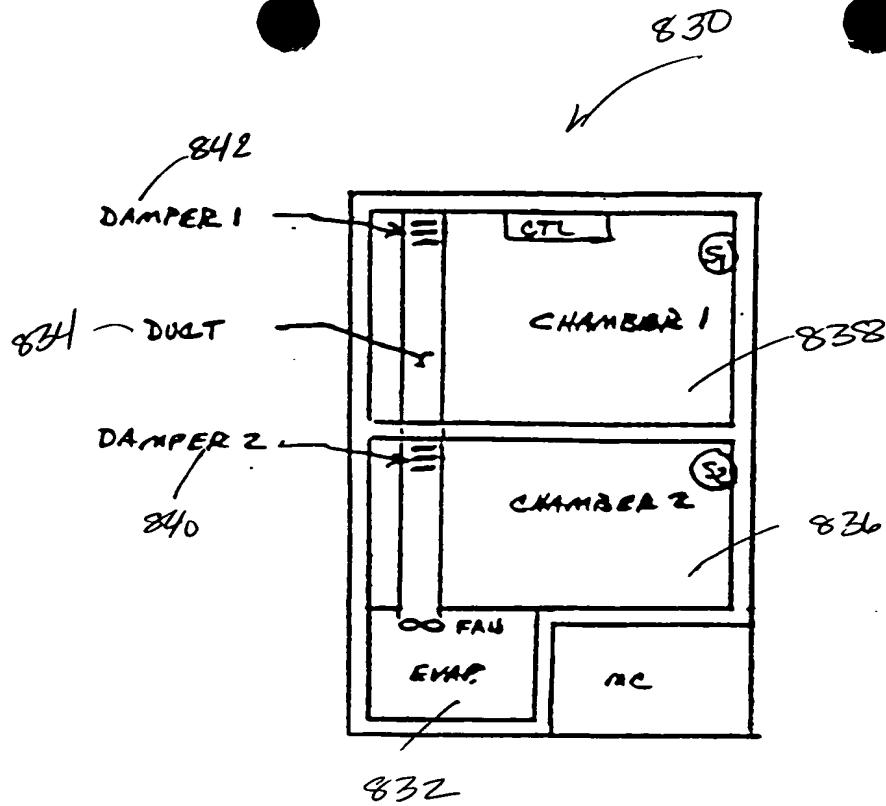


FIG. 50

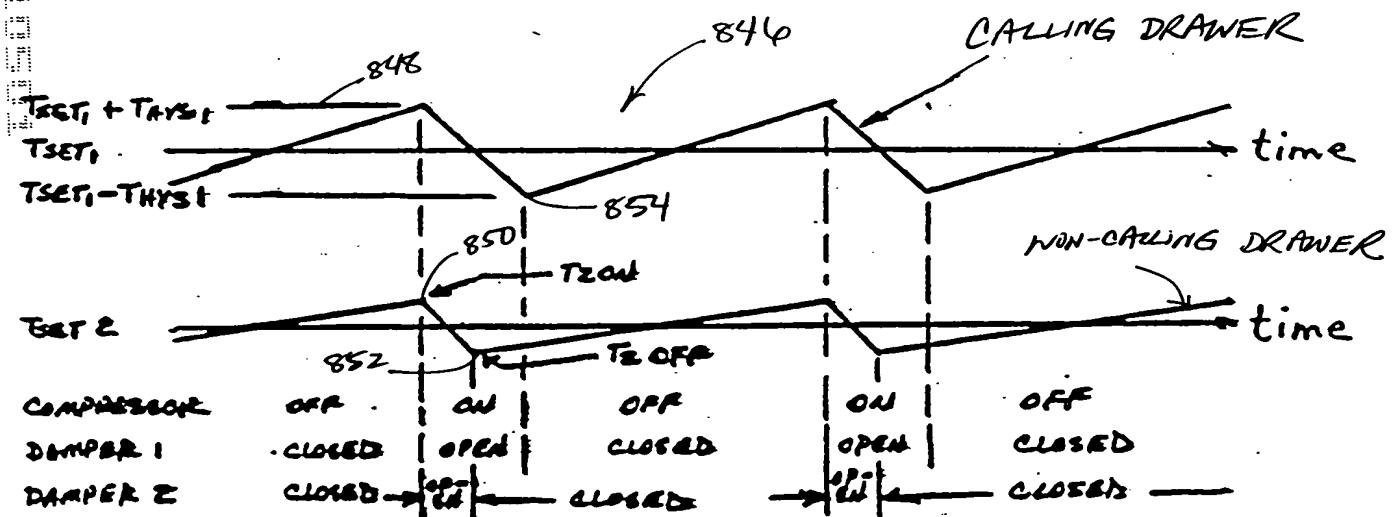
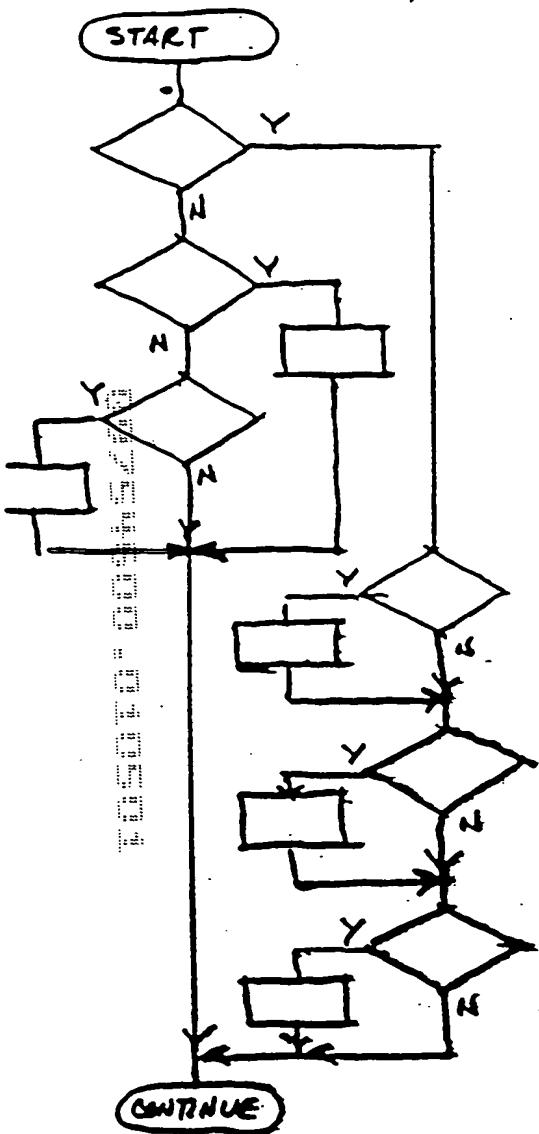


FIG. 51

49/55

848



COMPRESSOR ON ?

TEMP CHAMB1 $\geq T_{SET1} + THYS1$?

COMPRESSOR & FANS → ON

STORE TEMP OF CHAMB2 AS T_2 ON
CALC T_2 OFF = T_2 SET - (T_{ZON} - T_2 SET)
SET T_1 OFF = T_1 SET - T_1 HYS

TEMP CHAMB2 $\geq T_{SET2} + THYS2$?

COMPRESSOR & FANS → ON

STORE TEMP CHAMB1 AS T_1 ON
CALC T_1 OFF = T_1 SET - (T_{ZON} - T_1 SET)

SET T_2 OFF = T_2 SET - T_2 HYS

TEMP CHAMB1 $\leq T_1$ OFF ?

CLOSE DAMPER 1

TEMP CHAMB2 $\leq T_2$ OFF ?

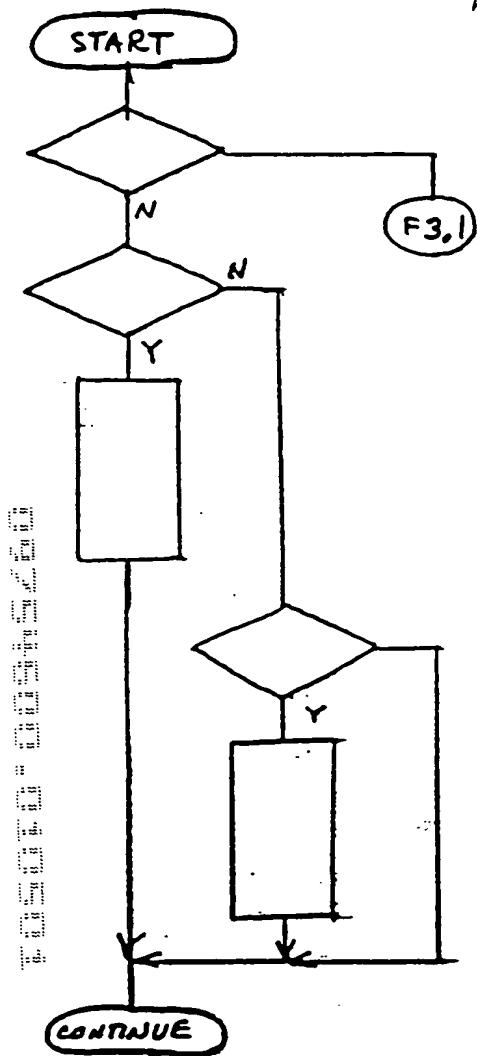
CLOSE DAMPER 2

ALL DAMPERS CLOSED ?

TURN OFF COMPRESSOR & FANS

FIG. 52

50/55



850

COMPRESSOR ON ?

$T_1 \geq T_{1\text{ MAX}}$

SET DAMPER FOR EQUAL AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 1 FLAG
SET $T_{1\text{ ON}} = T_1$

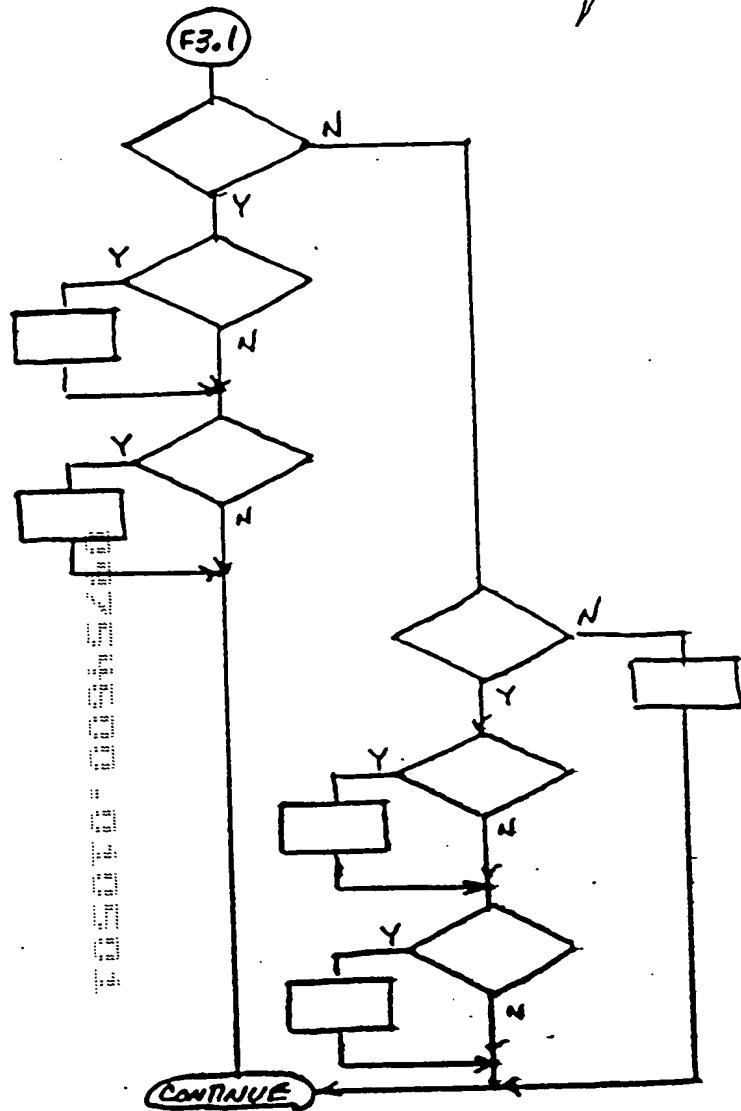
$T_2 \geq T_{2\text{ MAX}}$

SET DAMPER TO MAX AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 2 FLAG
SET $T_{2\text{ ON}} = T_2$

FIG. 53

51/55

— 852



CONDITION 1 FLAG SET ?

$$T_2 \leq T_{2SET} - (T_{2ON} - T_{2SET}) ?$$

CLOSE DAMPER

$$T_1 \leq T_{\min} ?$$

TURN COMPRESSOR AND FANS OFF
RESET CONDITION 1 FLAG

CONDITION 2 FLAG SET ?

ERROR — RESTART COMPUTER

$$T_2 \leq T_{2\text{ min}} \quad ?$$

CLOSE DAMPER

$$T_1 \leq T_{ISET} - (T_{ION} - T_{ISET}) ?$$

TURN COMPRESSOR AND FANS OFF
RESET CONDITION Z FLAG

FIG. 54

52/55

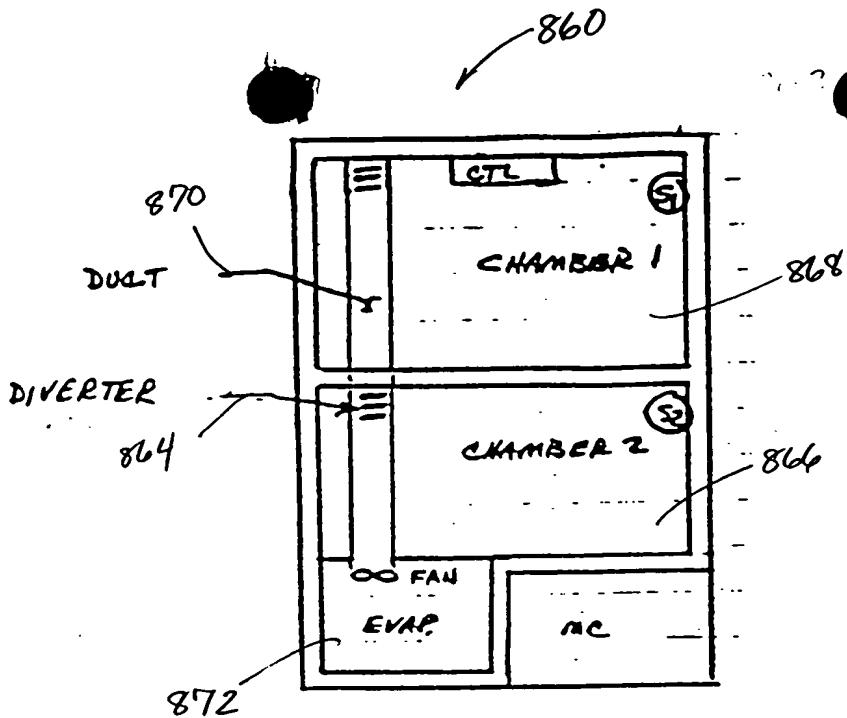


FIG. 55

RECORDED BY: D. J. GOLDBECK

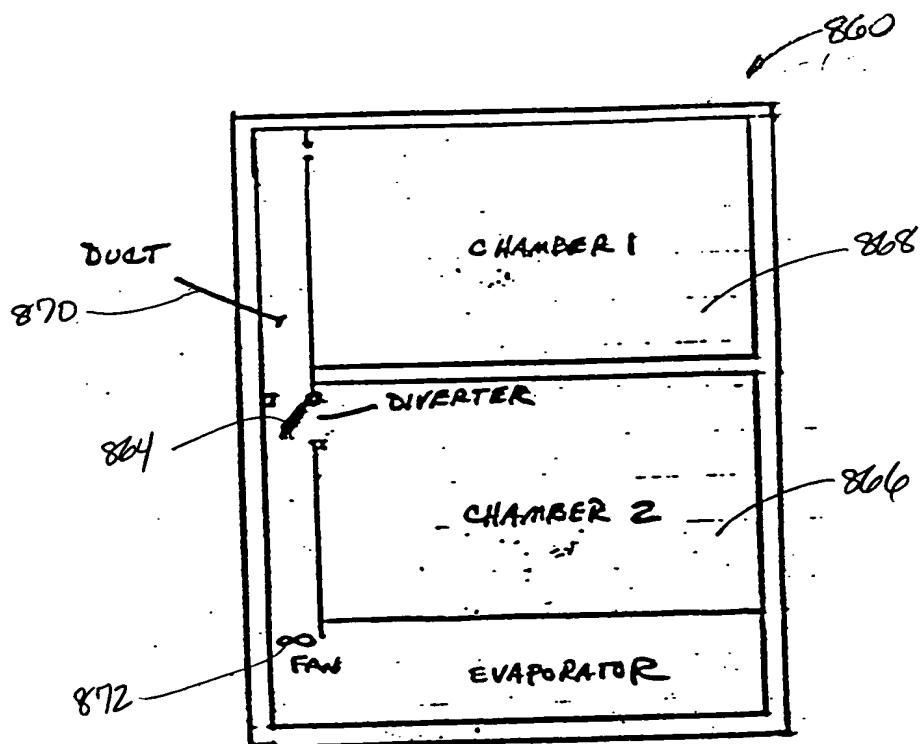


FIG. 56

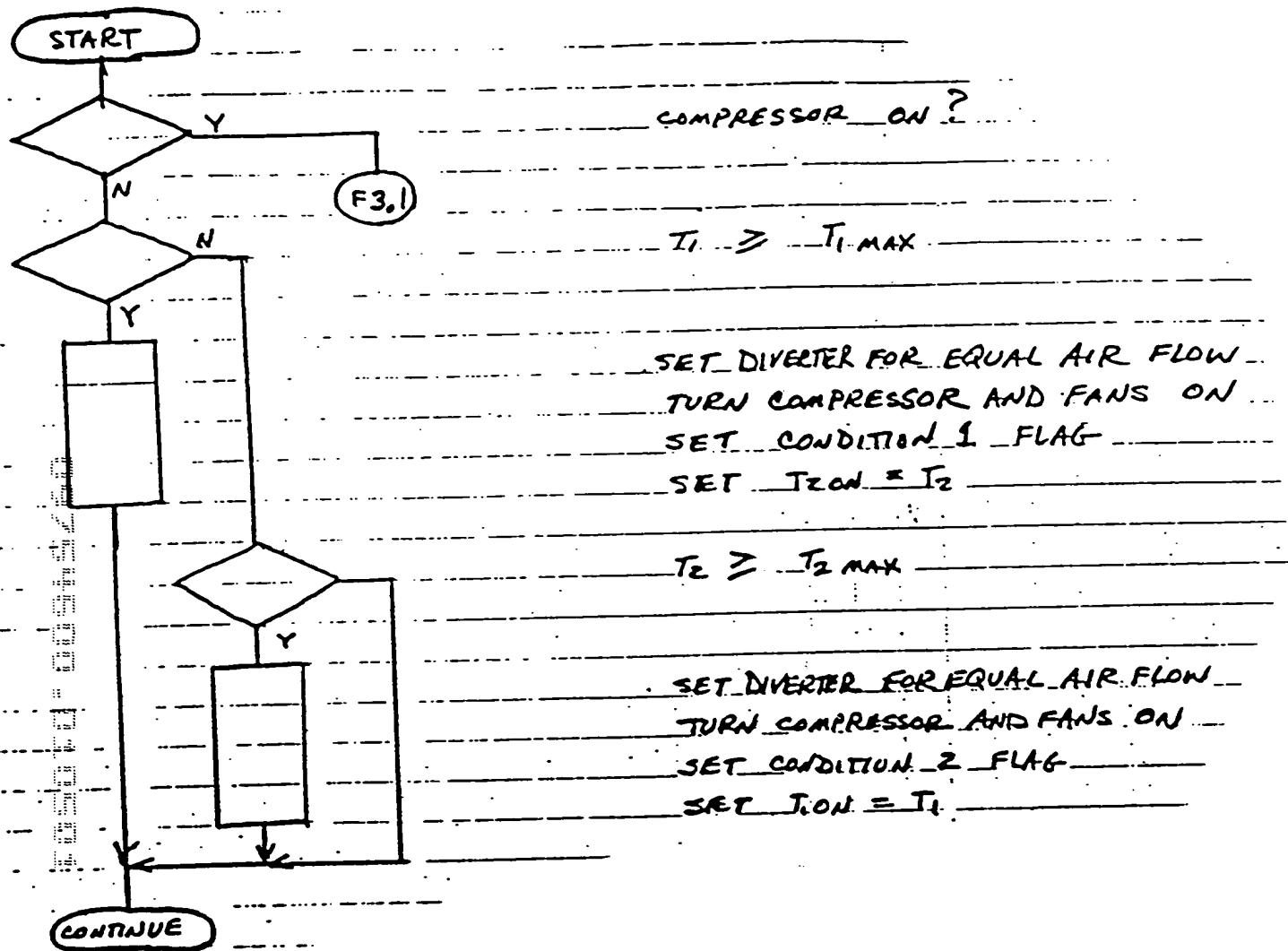


FIG. 57

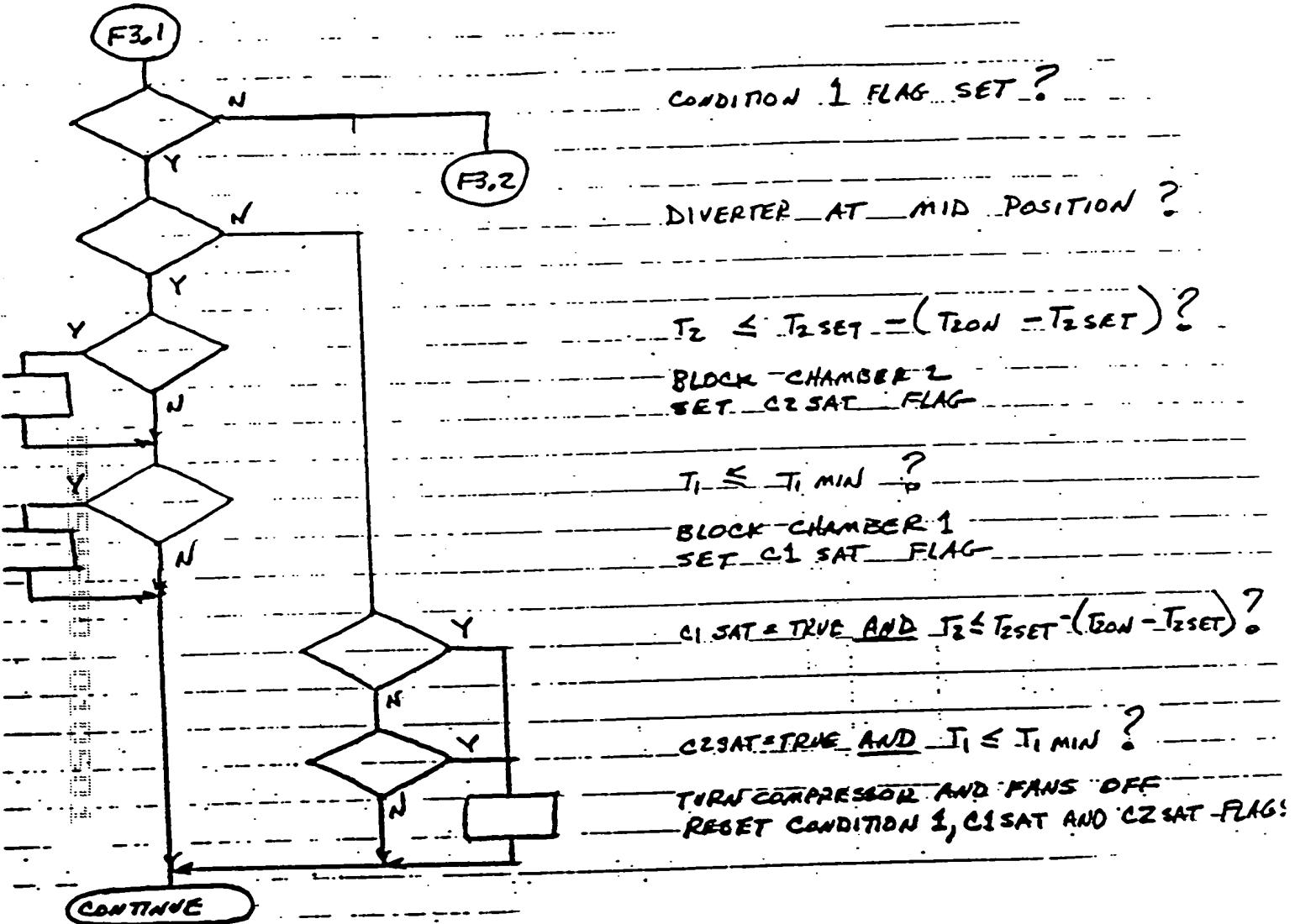


FIG. 58

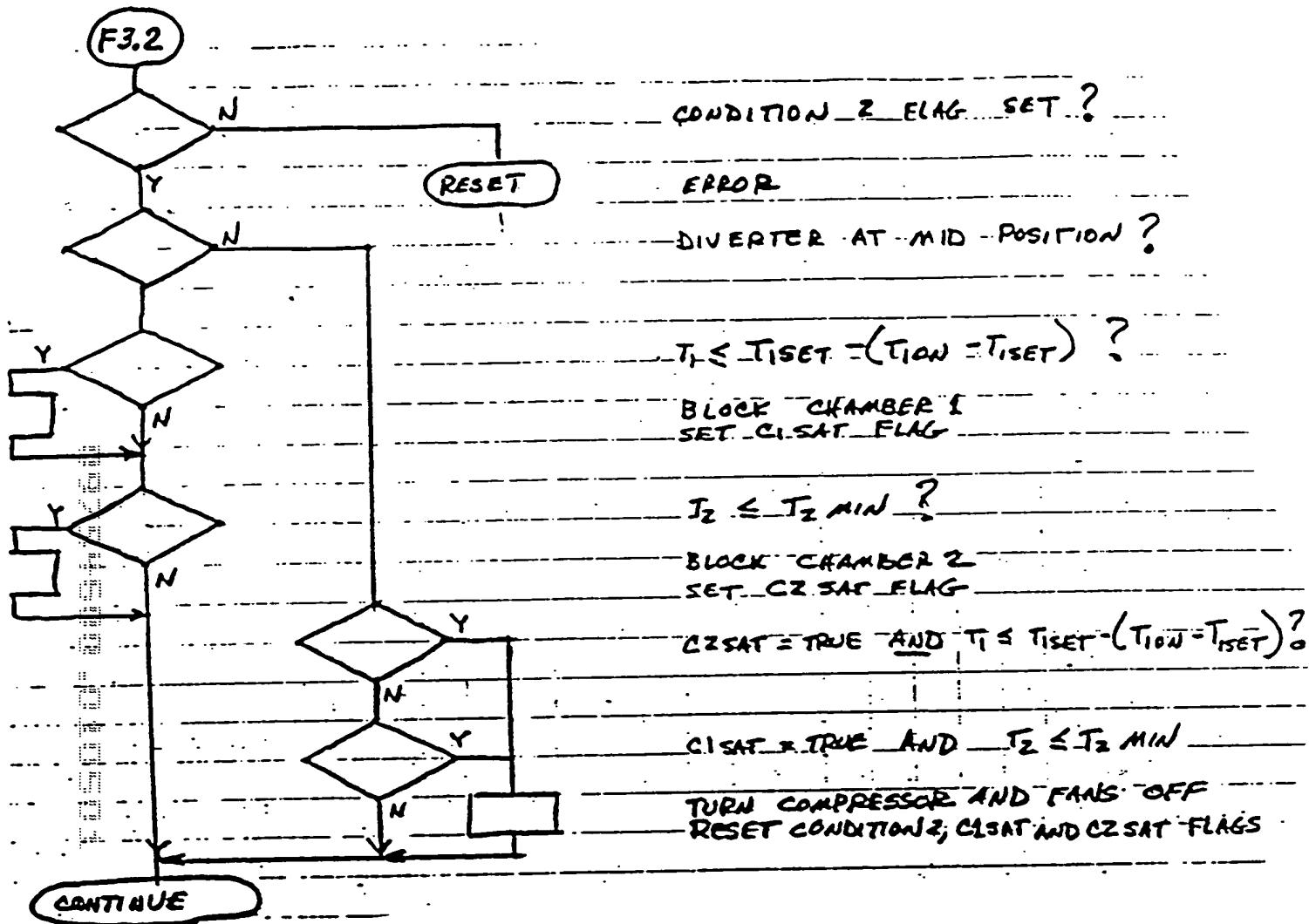


FIG. 59